Your (Half Yearly Compliance Report) has been Submitted with following details				
Proposal No	IA/JH/CMIN/7134/2006			
Compliance ID	72211848			
Compliance Number(For Tracking)	EC/M/COMPLIANCE/72211848/2024			
Reporting Year	2024			
Reporting Period	01 Dec(01 Apr - 30 Sep)			
Submission Date	29-11-2024			
RO/SRO Name	ARTATRANA MISHRA			
RO/SRO Email	jhk109@ifs.nic.in			
State	JHARKHAND			
RO/SRO Office Address	Integrated Regional Offices, Ranchi			
Note:- SMS and E-Mail has been sent to ARTATRANA MISHRA, JHARKHAND with Notification to Project Proponent.				



To

Deputy Director General of Forests (C),
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, 2nd Floor, Headquarter- Jharkhand State Housing Board,
Harmu Chowk, Ranchi, Jharkhand – 834002, Ranchi

Email: ro.ranchi-mef@gov.in

WBD/EMC/4071/103/24

Date: 29.11.2024

Ref: Environmental Clearance letter no. J-11015/108/2016-IA.II(M) dated: 17.05.2007

Sub: Online submission of Half-yearly EC Compliance Report for the period April'24 – September'24 in Parivesh Portal w.r.t West Bokaro Open Cast Coal Mine of Tata Steel Limited.

Dear Sir,

Environmental Clearance was accorded to West Bokaro Open Cast Coal Mine of Tata Steel Limited vide Letter No. J-11015/108/2006-IA.II(M), dated: 17.05.2007. We are herewith submitting the half yearly EC Compliance Report for the period from April'24 – September'24 as per EIA Notification, 2006 on Parivesh Portal and through soft copy for your ready reference.

We trust that the measures taken towards environmental safeguards comply with the stipulated environmental conditions. We look forward to your further guidance which shall certainly help us in our endeavor for further improve upon our Environmental Management practices.

Thanking you, Yours faithfully,

Head (Environment Management)

Raw Materials Division

TATA Steel Limited

Copy to : The Chairman, Central Pollution Control Board, South end Conclave, Block 502, 5th

& 6th Floors, 1582, Razidanga, Main Road, Kolkata - 700107 (West Bengal)

: The Member Secretary, State Pollution Control Board, T.A. Division (Ground Floor),

H.E.C. Dhurva, Ranchi - 834004 (Jharkhand)

: The Regional Officer, State Pollution Control Board, PTC Chowk, Matwari,

Hazaribagh – 825301 (Jharkhand)





Half Yearly Compliance Report

for the period April'24 – September'24 of

Environment Clearance accorded by MoEF&CC vide no. J-11015/108/2006-IA.II(M) dated 17.05.2007 for

West Bokaro Open Cast Coal Mine Tata Steel Limited

PO: Ghatotand, Block: Mandu

Dist.: Ramgarh, Jharkhand - 825314



A. Specific Conditions:

 No mining operations shall be undertaken in the forestland until clearance has been obtained under the provisions of FC Act, 1980.

Compliance:

Mining operations are continuing in the diverted forest area and broken-up forest area prior to 1980 as per Forest Conservation Act 1980 as well as non-forest areas.

(ii) The embankment along the river Bokaro shall be designed taking into account the highest flood level, based on past data, along the quarry area at the mine boundary along the River Bokaro so as to guard against mine inundation. The slope of the embankment shall at least 2:1 towards the ML and shall be stabilized by plantation. The height of the embankment shall be at least 5 m higher than the HFL.

Compliance:

The embankment along the entire stretch of river Bokaro (\sim 3kms) along the quarry area exists and is taking into account the highest flood level.

Following steps have been taken by the mine to guard against mine inundation:

- · Greenery has been developed and maintained on the natural barrier.
- In addition to this natural barrier, an embankment of ~ 1.9kms length has been constructed by using OB. This embankment (of width >50mtrs) is being maintained between mine and river Bokaro and is >5mtrs above the certified HFL of the mine. The embankment is having a slope of 2:1 towards the ML area. The embankment has been fully covered with plantation.
- In addition to the above, a concrete wall having length of 340 mtrs and height of 5 mtrs has also been constructed along the quarry edges leaving a solid barrier of ~15 mtrs from the riverbank.





Natural barrier along river



Embankment constructed by using OB which is stabilized and covered with greenery



(iii) Topsoil should be stacked properly with proper slope at earmarked site(s) and should not be kept active and shall be used for reclamation and development of green belt.

Compliance:

- No topsoil is presently being generated afresh as mining work is not being done in virgin area. Future
 mining operations in virgin areas will lead to generation of topsoil which will be spread over the
 backfilled area concurrently facilitating growth of plantation over the area.
- Earlier generated topsoil have already been used over the mine dumps and for plantation activities and these dumps have been stabilized.

Topsoil spreading on dump for plantation



Stabilized Mine dump after plantation

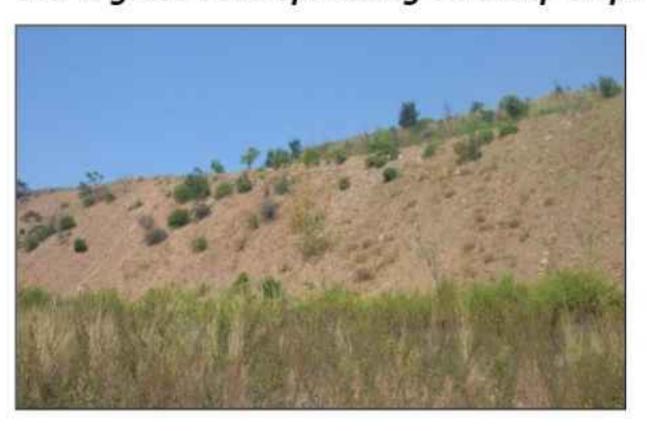


(iv) No new external OB dumps shall be created for storing OB. Monitoring and management of existing reclaimed dump sites should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional office located at Bhubaneswar on and yearly basis.

Compliance:

- After grant of EC, no new external OB dumps have been created.
- Currently, excavated OB is accommodated in the internal mine voids as part of mine backfilling.
- Out of above 4 external dumps, 3 dumps have already been covered with plantation and the dump has now become self-sustaining.
- Status of this point is updated in the half yearly EC Compliance report, which is being sent regularly to RO MoEFCC Ranchi.

Soil & grass seed spreading on dump slope



Grassing and Plantation on dump slope



Coir Matting in dump slope area







West Bokaro Open Cast Coal Mine, Tata Steel Limited

Back filling of quarry by Over Burden





Eco restoration: Before and After





(v) Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development, etc. The drains should be regularly de silted and maintained properly. Garland drains (size, gradient and length) and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also be provided adequate retention period to allow proper settling of silt material.

Compliance:

- In order to arrest flow of silt and sediments from OB dumps it is submitted that out of the 4 external OB dumps, 3 dumps have been fully covered with plantation which have become self-sustaining. There is no chance of any erosion from the OB dumps.
- The catch drains help to divert the surface run-off falling over the dumps to the mine sump. No water
 is allowed to discharge outside the mine premises.
- The only dump which is yet to be vegetated which falls over the coal bearing area as such it will be rehandled in the coming year to excavate coal blocked below it and accommodating the waste in decoaled void.
- This OB dump is located 800m far away from the river as such there is no chance of any flow of silt
 and sediment from this dump to natural water bodies as the excavated area falls in between.
- The mine quarry act as a big sump with approximate sump capacity 50 120 million gallons, considering maximum rainfall & depending upon the catchment area. Further, accumulated mine pit water is also being used in industrial and domestic purpose after necessary treatment. One of the abandoned quarries is being used as Rainwater Harvesting Structure of capacity 1600 million gallon.

Catch Drains at the toe of dumps





West Bokaro Open Cast Coal Mine, Tata Steel Limited

Active mine pit for water accumulation Abandoned mine pit as Rain Water Harvesting

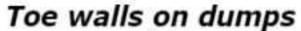


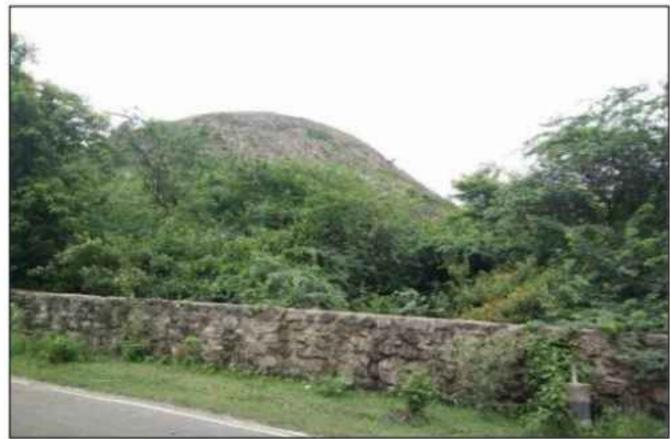


(vi) Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.

Compliance:

Dumps have been created with inward slope so that maximum runoff water in monsoon comes into the mine pits and no runoff water goes outside the mining lease. Further, toe wall and garland drains have been made to channelize the water inside the mine pit. Damaged toe walls are being repaired on regular basis. Photographs of the toe wall and garland drains area shown below.







(vii) Crushers at the CHP should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.

Compliance:

Crusher houses of CHP are equipped with dry fog dust suppression system at various belt transfer points. Fog Cannon (36 nozzles, 50mtrs range) and high pressurized fixed water sprinklers (42 nozzles) installed at the receiving hopper area of CHP. Additionally, truck mounted dust suction system has been deployed at crusher area.

Conventional coal stock yards are replaced with concrete silos for dust controls. Mobile water sprinklers (8 nos. pressurized water tankers of 42KL capacity) are used in mine haul roads and approach roads. Coal from mining to washery is being sent through closed conveyor system to reduce the fugitive emission. Mist Cannons is being used in coal stacking area. Fixed water sprinkler network has been installed in the coal dispatch areas. Further closed pipe conveyors are used to transport Clean Coal and Middlings from Washery to Chainpur Siding.

Use of fixed & mobile water sprinklers





Mobile Road Cleaner



West Bokaro Open Cast Coal Mine, Tata Steel Limited

Dry fog dust suppression system in crushing units



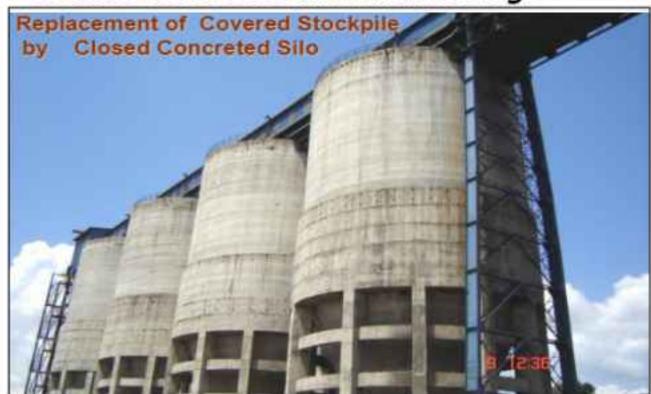




Pipe Conveyor for material transport



Concrete silos for material storage



(viii) Drills should be wet operated.

Compliance:

All the drills are wet operated and interlocked with drill operations.







(ix) Controlled blasting should be practiced only during daytime with use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.

Compliance:

Blasting in mines area is regularly being practiced in daytime only. As per DGMS permission, Controlled blasting is done using proper muffling and maintaining the k-value proposed by CMPDI. Continuous monitoring along with data collection is being practiced. Delay detonators are being practiced minimizing vibration, dust & formation of fly rocks. The Vibration test is conducted at regular intervals and the PPV values are found to be within limits. Scientific study has also been conducted from reputed & recognized organizations.

DGMS permission is enclosed as **Annexure-I**. The latest vibration monitoring report is enclosed as **Annexure-II**.

(x) Area brought under afforestation shall not be less than 1260 ha which includes reclaimed external OB dump (85 ha), backfilled area (974 ha), along ML boundary, along roads, green belt (201 ha), in undisturbed areas and in colony within the mine lease area by planting native species in consultation with the local DFO/ Agriculture Department. The density of the trees should be around 2500 plants/ ha.

Compliance:

Progressive afforestation is being practiced as per approved mining plan. This year about 13,000 native trees, shrubs and grass saplings have been planted in areas including OB dumps, safety zone, residential colonies, etc. Transplantation of 700 trees over fly ash dump has also been done in FY24. Density of the plantation area is maintained at 2500 plants/ ha.

Historical Plantation data:

SI.	Year	Actual	Cumulative	Area
No.	rear	Plantation	Plantation	(ha.)
1	2006	60000	60000	12.00
2	2007	10000	70000	2.00
3	2008	107000	177000	21.40
4	2009	51500	228500	10.30
5	2010	49250	277750	9.85
6	2011	60375	338125	12.08
7	2012	69213	407338	13.84
8	2013	50388	457725	10.08
9	2014	34806	492531	6.96
10	2015	52597	545128	10.52
11	2016	33702	578830	6.74
12	2017	66149	644979	13.23
13	2018	15000	659979	3.00
14	2019	27718	687697	6.65
15	2020	13000	700697	3.12
16	2021	8501	709198	2.04
17	2022	10428	719626	3.02
18	2023	12860	732486	4.3

TATA Steel is committed to conserve, enhance & restore the biodiversity in it's areas of operations and made a biodiversity policy to achieve no net loss of biodiversity over a period of time. Various initiatives are taken to conserve and restore the biodiversity in the area in consultation with forest officials. We have developed a native plant species nursery in the mined-out area and all the plantation activities are being carried out using the in-house developed saplings.

Plantation activities







Biodiversity Initiatives









Mined out Area Development (Reclamation)





Seed balls spreading on dump slope area



Butterfly, Hibiscus and Medicinal Park development on mined out area





Spice Garden & Miyawaki Plot Development on mined out area





Nursery - Inhouse development of Native Plant Species





(xi) A Progressive Closure Plan shall be implemented by reclamation of quarry area of 974 ha which shall be backfilled and afforested by planting native plant species in consultation with the local DFO/ Agriculture Department. The density of the trees should be around 2500 plants per ha. The balance 20 ha of de coaled area being converted into a water reservoir shall gently slope along the upper benches and stabilized and reclaimed with plantation.

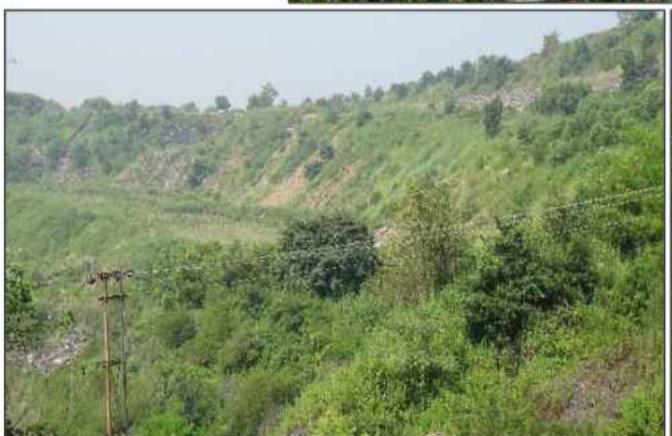
Compliance:

Progressive Mine Closure Plan is being implemented in accordance with approved Mine plan. This has been verified during site inspection by CCO and CMPDI held in 2024. The recommendation received for release of escrow account amount for PMCP implementation is enclosed as **Annexure-III**. The total reclamation of quarry area is 974 ha out of which 98 ha area has been reclaimed through backfilling as on date. Afforestation & reclamation of de-coaled area is being done by planting native species such as Banyan, Pipal, Sal, Mahua, Palash, Shisham, Karanj, Jamun, Arjuna, Babul, Kathal, Neem, Gulmohar, Teak, Ber, etc in consultation with DFO Ramgarh Forest Division as per prevailing guidelines (**enclosed as Annexure-IV**). As per approved mine plan, all dumps will be re-handled as the mine progress, however, to stabilize the dumps, plantation was done by native grasses and shrubs, and we have also done the soil spreading on dump slopes followed by grass seedball spreading.

Plantation has been completed along the upper benches with gentle slopes of Pundi de-coaled area which has been converted into water reservoir.

Soil, grass spreading and plantation on dump slope in Pundi area







De-coaled Q-E converted into Water Harvesting Reservoir



(xii) A Conservation Plan for endangered species found in and around the project area shall be formulated and for the medicinal plants (in-situ and ex-situ) shall be prepared and implemented in consultation with the State Forest and Wildlife Departments. Separate funds shall be earmarked for implementation of the various activities there under and the status thereof shall be regularly reported to this Ministry and the MoEFCC Regional Office, Bhubaneswar.

Compliance:

- There are no endangered species as per IUCN Red list recorded in and around project area.
- Site Specific Wildlife Management Plan has been prepared in consultation with officials of Forest Dept. and submitted to DFO Ramgarh.
- Medicinal Park has been developed in an area of 1700 sq.m and maintained to conserve plants having medicinal values. Many species have been planted in the medicinal park such as Aswagandha, Arjun, Bay leaf, Lemon grass, Insulin, Kalonji, Vernonia, Dhatura, Sarpagandha, Tulsi, Hing, Aloe vera, Chirata, Shatavari, Giloy, Madar, Semar, etc have been planted in the area.

Medicinal Park at West Bokaro



(xiii) No groundwater shall be used for the mining / project activities. Additional water required, if any, shall be met by recycling / reuse of the water from the existing activities and from rainwater harvesting measures.

Compliance:

- There is no abstraction of ground water from borewell, dug well for mining and project activities.
 However, CGWA NOC is available for dewatering of mine water (enclosed as Annexure-V).
- No river water is consumed. Active mine pits are being utilized for water accumulation for use in water spraying in mine. This leads to optimized use of mine water and promotes conservation of surface water resources.
- An abandoned mine pit is converted into Rainwater Harvesting (RWH) pond of capacity of 1600 Million Gallon, which is being used for industrial and domestic purpose after proper treatment as per the requirement.
- All the plants are operated at Zero Effluent Discharge (ZED) and entire processed water is recycled
 and reused. We are recycling the washery outlet water after dewatering process of tailings in our
 mechanical dewatering plant and further, recycling of water from the tailing's ponds in a closed circuit.

Active mine pit for water accumulation Abandoned mine pit as Rainwater Harvesting





Mechanical Tailing Dewatering Plant and Filter Press





Water Recycling from tailings ponds



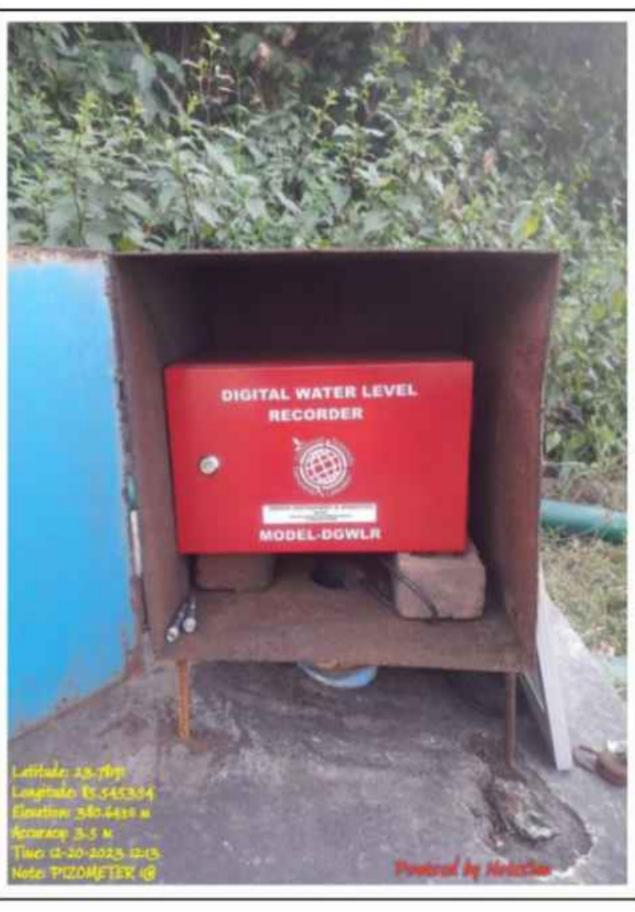
(xiv) Regular monitoring of groundwater level and quality should be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.

Compliance:

Regular monitoring of groundwater level and quality is being carried out by a network of piezo-wells (2 nos.) and dug-wells (11 nos). The monitoring of ground water level is being done four times a year in premonsoon, monsoon, post-monsoon and winter seasons and for quality in May. Data thus collected is being submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly.







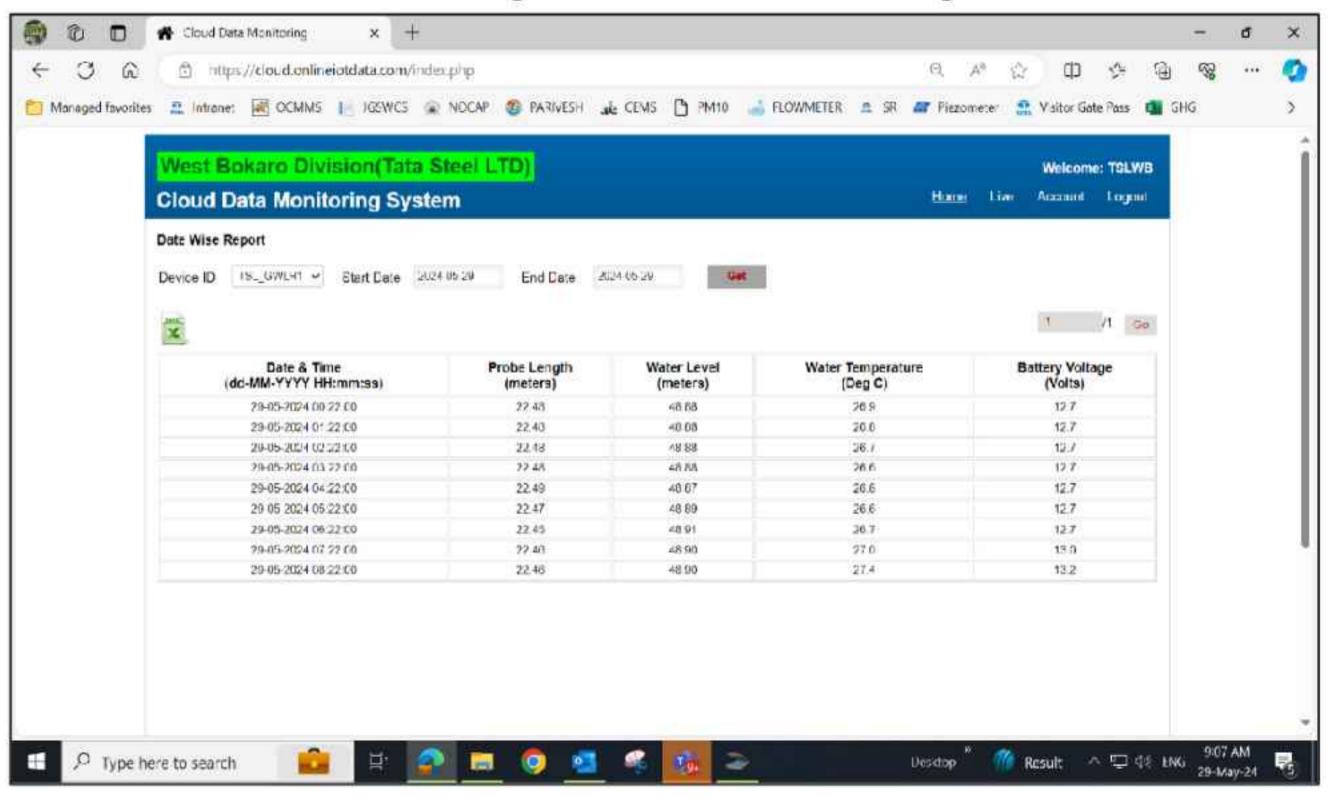
The latest submitted reports (GW level of dug-well) for months of May'24, Aug'24 and Nov'24 are attached as **Annexure-VI**.

West Bokaro Open Cast Coal Mine, Tata Steel Limited

The following GW level data of post-monsoon season (Nov'24) and pre-monsoon season (May'24):

SI. No	Location / Date	Latitude	Longitude	Reduced Level (m)	May'2024	Nov'2024
1	Housing	23.792068	85.57539	474	0.95	0.55
2	Mukundbeda	23.794802	85.575524	436	2.45	3.60
3	Driver Hut	23.784555	85.556142	367	1.80	1.90
4	Pundi	23.779666	85.521478	430	1.85	1.30
5	Duni	23.756172	85.556454	208	2.15	0.35
6	Kedla Road	23.804268	85.574922	454	3.60	3.90
7	Jharna Basti	23.784335	85.581215	442	1.30	1.0
8	Birhor Village	23.808672	85.564011	418	4.40	2.0
9	Bhelgada Village	23.792068	85.57539	427	00	00
10	Chainpur Well No. 1	23.738282	85.569806	203	4.28	5.27

Screenshot of real time ground water level monitoring with Piezometers



(xv) The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.

Compliance:

We have converted abandoned mined out pit in Pundi area as a rainwater harvesting reservoir which helps to recharge the ground level. The ground water recharge measures are continuously being taken up in buffer zone by developing the village ponds and wells.

We are supplying the drinking water to the nearby villages by pipeline network from our mine pit water followed by water softening facility and we have also constructed a Rainwater Harvesting cum water treatment facility to supply water to nearby villages.

West Bokaro Open Cast Coal Mine, Tata Steel Limited

EC Compliance Report

Abandoned Mine pit converted into RWH reservoir.



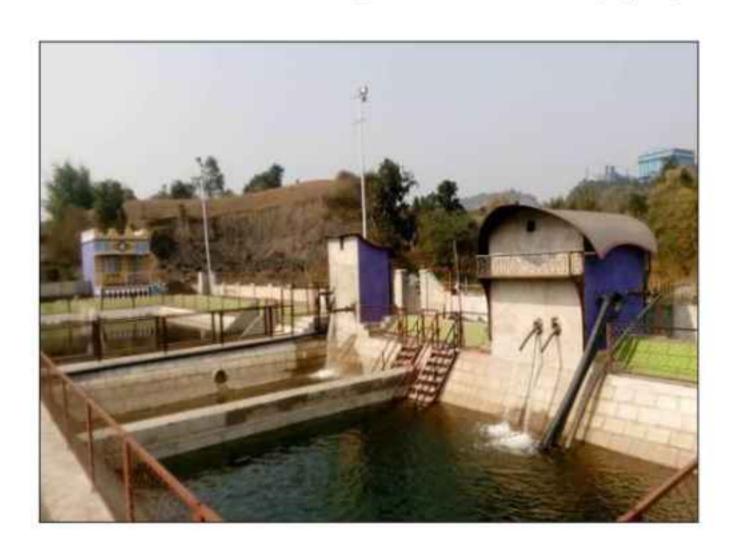
Ponds cum Rainwater Harvesting structures in Village areas

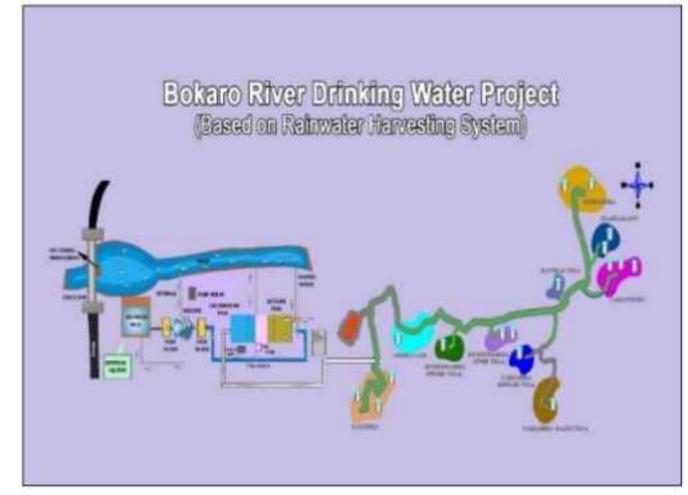






Drinking water facilities/ projects for villagers by West Bokaro Mine









(xvi) ETP should also be provided for workshop, coal washery and CHP. There shall be zero discharge of wastewater from CHP and the coal washeries. Effluents from the tailings pond shall be treated to conform to prescribed standards in case of discharge into any water course outside the lease.

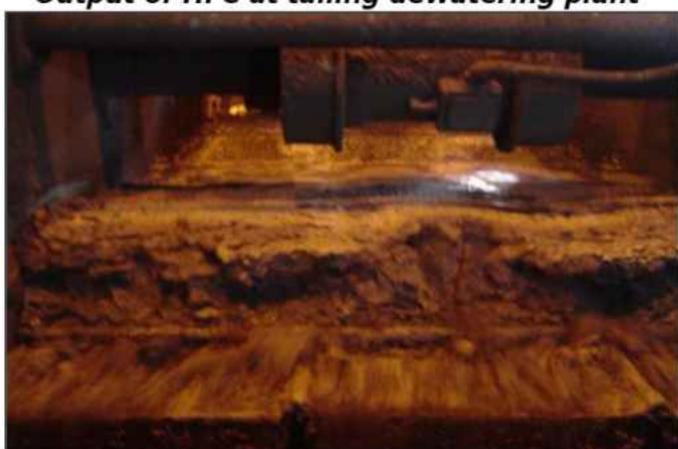
Compliance:

ETP for HEMM workshop of 320 KLD is maintained with ZLD. In addition to above, mechanical tailing dewatering system is installed for Washery & CHP area by which the tailing slurry is handled through high frequency screen and belt press to produce dry tailings and recover water for recycling and further, recycling of water from the tailings ponds in a closed circuit. The water from tailing pond after proper desilting of tailings is recycled back to washeries to maintain zero discharge. Oil traps are also installed for workshops.

Mechanical tailings de-watering system



Output of HFC at tailing dewatering plant



Water Recycling from tailings ponds



Oil & Grease trap at mines



(xvii) A STP shall be provided for the township / colony to treat the domestic effluents to prescribed standards and for their reuse in project activities.

Compliance:

Sewage Treatment Plants (STPs) are installed inside the lease hold area and treated water is being reused in dust suppression of the road, gardening purpose and other project activities. Details of installed STPs as below:

SI Locations NO		Capacity (in KLD)
1.	Chainpur	100
2.	Driver hut	300
3.	Hospital	115
4.	Housing	500
5.	FRS-Quarry area	25
6.	Washery area	5

Photographs of the STPs

5 KLD STP at Washery Canteen



100 KLD STP at Chainpur



500 KLD STP at Housing Colony



300 KLD STP at Driver Hut Colony



(xviii) R&R shall be based on norms laid down by the State Government and shall not be inferior than that in the National R&R Policy and shall be completed within a specified time - frame.

Compliance:

Tata Steel's West Bokaro Colliery was granted a mining lease of 1740 ha and all the operations are confined within the leasehold area and further, there is no additional land acquisition envisaged for the project so there is no applicability of R & R for the project. Although, we are shifting the illegal inhabitants (encroachers) outside the working area.

(xix) For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 5000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MoEF&CC and its Regional office at Bhubaneswar.

Compliance:

A Land use maps was prepared for core and buffer zone with a detailed study report and the same was submitted to Regional office of Ministry of Environment, Forest & Climate Change vide letter no. WBD/EMC/4071/003/24 dated: 03.01.2024 and soft copy also mail to ro.ranchi-mef@gov.in dated 03.01.2024.

The previous map was submitted to MoEFCC in the year 2021.

(xx) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests for approval 5 years in advance of final mine closure for approval.

Compliance:

It will be complied five years in advance of final mine closure plan for approval. Although we are submitting Mine Closure Fund annually in Escrow account.

(xxi) Consent to operate shall be obtained before expanding mining operations. Compliance:

Consent to operate is being obtained regularly and is valid till 31.12.2025 (Valid CTE & CTO enclosed as Annexure-VII).

West Bokaro Open Cast Coal Mine, Tata Steel Limited

B. General Conditions:

 No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.

Compliance:

Noted. Shovel dumper mining technology is being implemented.

(ii) No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.

Compliance:

Complied. The raw coal production is in line with the mining plan with the approved EC limit.

(iii) Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RPM, SO2 and NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the SPCB.

Compliance:

Locations for ambient air quality monitoring stations were decided considering the topography of the area, prevailing wind directions obtained from long-term meteorological data (30-year data sourced from IMD Hazaribagh station) and approachability to the sampling site, regional background, population density and industrial activities in the area. The pre-dominant direction of the wind is from North-West (NW) direction and 2nd dominant direction is South-East (SE) direction.

Air monitoring stations in core zone (4 nos.) as well as in the buffer zone (4 nos.) has been established for ambient air quality monitoring in consultation with Regional Officer of State Pollution Control Board.

Consultation letter as Annexure-VIII

(iv) Fugitive dust emissions (SPM and RPM) from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points should be provided and properly maintained.

Compliance:

All the strategic locations of operating plants with the possibilities of fugitive dust emissions has been provided with adequate enclosures, side skirt, chute, seal plate, sealing of transfer points along with adequate dust suppression system.

The haul road, loading and unloading points are provided with pressurized water tanker for water spraying along with chemical dosing, wagon loading does not require any water spraying since the coal is in moist condition. Fixed water sprinklers have been provided on the roads.

Further, closed pipe conveyors and belt conveyors are being used for material transfer from mine pit head crushing plant to washeries. water mist canon is being used at material stock yards and water chemical crust is being used on outgoing material carrying trucks to eliminate the fugitive emission. All the sites are monitored regularly and data is kept for record.

Dry fog dust suppression system in crushing units







Use of fixed & mobile water sprinklers





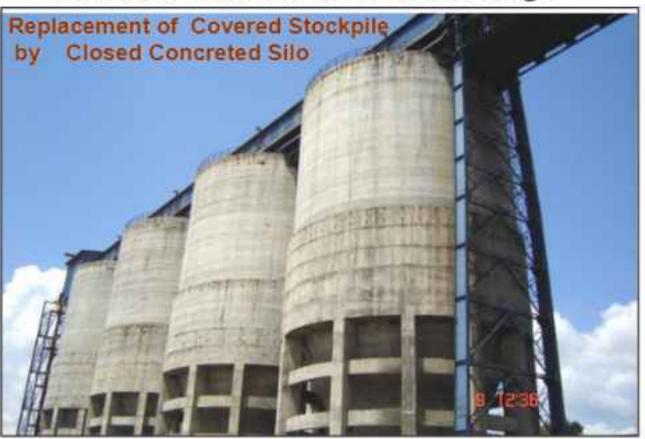




Pipe Conveyor for material transport



Concrete silos for material storage



(v) Data on ambient air quality (SPM, RPM, SO2 and NOx) should be regularly submitted to the Ministry including its Regional Office at Bhubneshwar and to the State Pollution Control Board and to the Central Pollution Control Board once in six months.

Compliance:

Being complied with as per NAAQS 2009 standard. Continuous Ambient Air Quality Monitoring System (CAAQMS) is stationed within leasehold area and is operational. All the parameters such as PM10, PM2.5, NO, NO2, NOx, CO, SO2, Wind Speed (in m/s), and Wind Direction (in degree) are recorded every 15 minutes interval by analyzers equipped in mobile CAAQMS van. All the instruments including mobile van has been supplied and is approved by CPCB & USEPA. The data connectivity is done with CPCB & JSPCB server.

Continuous Ambient Air Quality Monitoring System (CAAQMS)





(vi) Adequate measures should be taken for control of noise levels below 85 db(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc. should be provided with ear plugs/ muffs.

Compliance:

Control measures are being taken up to keep noise level well within limit in working environment by providing adequate enclosure/ separation to the various high noise sources, proper maintenance, provision of control room, operator's a/c cabin etc. In addition, all the persons are provided with PPEs such as ear plug/ muff during work, total 2100 Nos. ear plug distributed in FY24 Enclosed as **Annexure-IX**. Warning signs in local language are also displayed at various areas in mines & plant. An adequate green belt is also maintained in the area.

Noise Control Measures - AC acoustic cabins



Work-zone Noise monitoring



(vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap should be installed before discharge of workshop effluents.

Compliance:

ETP for HEMM workshop of capacity 320 KLD is maintained with ZLD. The Industrial wastewaters generated from various operations are handled through effluent management system provided in all operational dept. with the objective to treat the effluent and recycle the clear water into the system again. The HEMM maintenance shops have been provided with oil trap arrangement to recover the oil during washing of equipment. The recovered used oil during washing is sold to authorized recycler as per guideline and the effluent generated is checked for quality and recycled - reused in the system.

The Hazardous Waste Authorization Copy is enclosed as **Annexure-X**. Annual Form 4 returns is also enclosed as **Annexure-XI**.

The ETP treated water quality is analyzed on quarterly basis by own lab as well as third party NABL lab. The parameters have been found to be within limits.







(viii) Vehicular emissions should be kept under control and regularly monitored vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.

Compliance:

Vehicular emission is kept under control by regularly monitoring & maintenance of vehicles. overloading of vehicles is avoided during mineral transport. We also transferring material by pipe conveyors. For transportation of Minerals, we are using dust seal 81620 of M/s Nalco water India Ltd. for which NOC has been granted by JSPCB to use this as other means to cover coal while transportation.

Pipe Conveyor







(ix) Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.

Compliance:

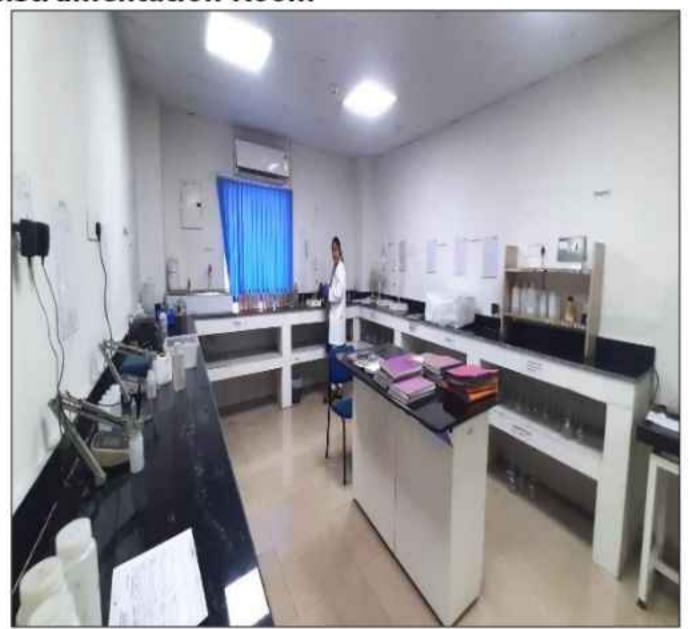
A full-fledged Environmental laboratory is functioning with adequate number of pollution monitoring and analysis instruments. The laboratory employs well trained chemists and staff to carry out the sampling and analysis jobs for monitoring of air quality, effluent water quality, drinking water quality and surface/ground water quality. Records of all such parameters including ambient noise, ground water level, meteorological data is maintained in the lab.

The lab is equipped with following instruments:

- Micro-balance
- Hot-Air Oven
- RDS/PM 2.5 analyser
- Noise meter
- PH meter
- TDS meter
- BOD incubator
- COD digestor
- Filtration assembly
- Turbidity meter







Wet Analysis Room



Lab area



(x) Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.

Compliance:

All dusty areas such as crushers etc. are provided with dry fog system and fixed dust sprinklers so as to eliminate dust from source. All haul roads are equipped with fixed and mobile dust sprinklers. All drill operations are wet only. The operators of various HEMM being operated inside the mines are provided with air-condition cabins. In addition, total 4520 Nos. of dust masks has been provided to the personnel working in dusty area in FY24. The persons have been imparted necessary training on safe work practices and appraised the adverse consequences on health in case of any violation of the practices.

Occupational health surveillance program is being conducted on regular basis in our Hospital for health checkup as per the Coal Mines Rules. The health awareness program is also being conducted regularly in all the departments. There are no adverse cases found during the health check-up assessments.

West Bokaro Tata Main Hospital is well-equipped with an Occupational Health Surveillance Center. OHS Center employs a full-time Occupational Health Specialist. Health of the employees through audiometry, X-ray, pathology, ophthalmology, lung-function test, etc are monitored.

Some of the best practices related to occupational health adopted in mine are:

- Employees' health check-up under Wellness @ Workplace program
- Health awareness classes on weekly basis for shop floor employees
- · Officers' health check-up on yearly basis for lifestyle disease
- · Counseling to high blood pressure, sugar, cholesterol, hypertension for employees.
- Observation of important health days like World No Tobacco day, AIDS day, Heart day, Diabetic day.
- · Display of calorie chart in canteens alongside the menu.

Pre-placement medical examination and periodical examination of the workers engaged is being conducted & record maintained. The schedule of Periodical Medical Examination is once in every 3 years for the employees of age more than 45 years and once in 5 years for the employees of age less than 45 years. The Occupational health surveillance (IME/PME) report is enclosed as **Annexure-XII**.

Health awareness classes









(xi) A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the company.

Compliance:

A separate Environment Management Cell is in place at West Bokaro with qualified persons. The Environmental Management system is guided by the Environmental policy of Company & guidelines of ISO 14001. There is a well-established system for identification of environmental aspects and impacts and review mechanism of the implementation of environmental management system. Any non-compliance is dealt at bottom and reported to the highest level in the hierarchy. Employee joining letters attached **Annexure-XIII.**

CORPORATE ENVIRONMENT POLICY AND HIERARCHICAL SYSTEM:

The company's environment policy prescribes for setting objectives-targets, develop, implement and maintain management standards and systems.

The company has in place a board level Safety, Health & Environment (SHE) Committee that provides necessary direction and guidance on matters relating to environment and monitors the performance of the Company and its impact on the environment.

The status is reviewed in monthly meetings and any non-compliance noticed is corrected at divisional level. Every month, the status of compliance is submitted to the higher management.

Therefore, the status of adherence to the policy and compliance to environmental laws and regulations is regularly checked at higher levels.

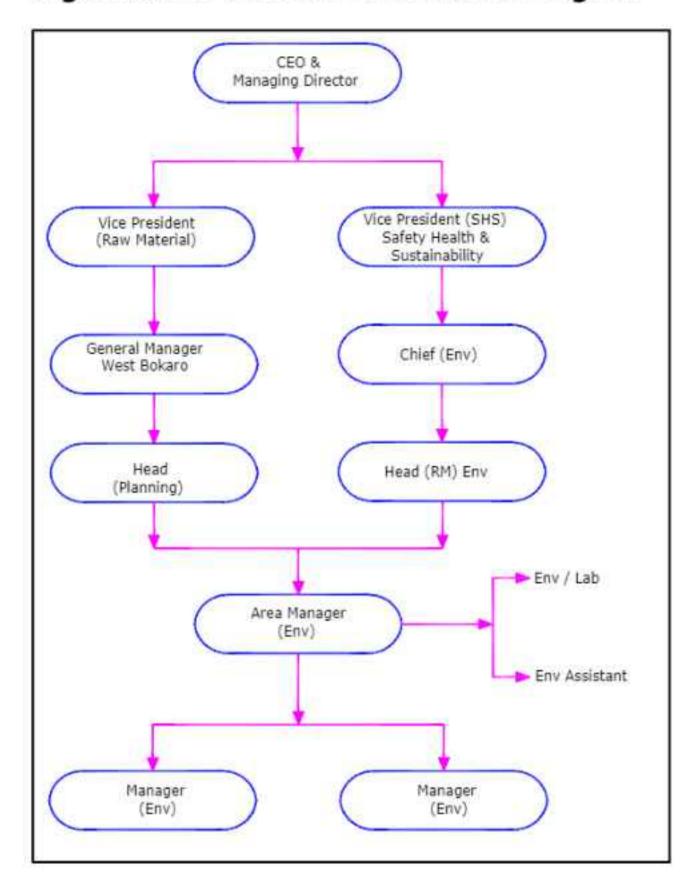
Details of the personnel of Environmental Management Cell of West Bokaro Division:

SI. No.	Name	Qualification	Designation	Work Experience
1	Mr. Mukesh Kumar Prasad	B.Tech in Env Engg	Head (Environment Management) RM	14 years
2	Mr. Pradeep Kumar Gour	B.Tech in Env Engg	Area Manager Environment Coal	06 years
3	Mr. Soumya Ranjan Rath	M.Tech in Env Engg	Manager Environment West Bokaro	05 years
4	Mr. Ajeet Singh	PGD Env Science	Manager Afforestation West Bokaro	22 years
5	Mr. Nageshwar Mahato	Sr Secondary	Lab. Asst.	21 years
6	Mr. Budhan Besra	Sr Secondary	Lab. Asst.	22 years
7	Mr. Karan Kishor Rakesh	M.Sc in Chemistry	Sr. Chemist	28 years
8	Mr. Pashupati Nath Gupta	M.Sc in Chemistry	Chemist	08 Years
9	Ms. Priyanka Mehta	M.Sc in Chemistry	Chemist	04 years
10	Mr. Sunil Kumar	B.Com	Office Associate	16 years

Environment Policy of Tata Steel Limited



Organization Chart of Environment Mgmt.



(xii) The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to this Ministry and its Regional Office at Bhubaneswar.

Compliance:

The Environmental Management Cell of West Bokaro Division having separate fund for environmental protection measures / compliance to legal requirements. Besides above, all other departments are also maintaining expenditure details for environmental protection measures in their working area. The expenditure occurred during the FY-24 is approx. Rs.6478.04 Lakh. (Annexure-XIV)

(xiii) The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/information/monitoring reports.

Compliance:

Being complied with.

(xiv) A copy of the clearance letter will be marked to concerned Panchayat / local NGO, if any, from whom any suggestion / representation has been received while processing the proposal.

Compliance:

A copy of the Environmental Clearance letter was submitted to The Panchayat Sewak vide letter no. WBD/EMC-10/59/07 dated: 12.06.2007.

Letter to Panchayat Sewak



(xv) State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office for 30 days.

Compliance:

Complied with.

(xvi) The Project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in.

Compliance:

Complied with.

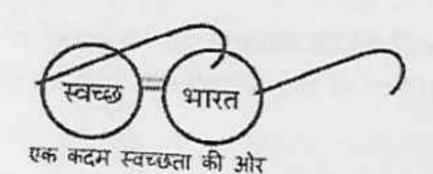
News Paper circulation







Registered Post



भारत सरकार/ Govt. of India श्रम एवं रोजगार मंत्रालय Ministry of Labour & Employment

खान सुरक्षा महानिदेशालय Directorate General of Mines Safety राँची क्षेत्र,राँची/Ranchi Region, Ranchi



संख्या s-29020/12/2018-RR/ 30 78

राँची,

दिनांक <u>11 / 9</u> /2018

प्रेषक

खान सुरक्षा निदेशक,राँची क्षेत्र, खान सुरक्षा महानिदेशालय, आर. आई-।।।, तीसरा तल्ला, सी. एम. पी. डी. आई. परिसर, काँके रोड़, राँची-834 008.

अभिकर्ता, वेस्ट बोकारो ओपनकास्ट (क्वारी ए बी) मे0 टाटा स्टील लिमिटेड, पोस्ट-घाटोटांड, जिला- रामगढ़, झारखण्ड-825 314.

विषय:— मेसर्स टाटा स्टील लिमिटेड की वेस्ट बोकारो ओपनकास्ट (क्वारी ए बी) के निवास / ढाँचे से 500 मीटर के अन्दर परन्तु 100 मीटर के बाहर, कोयला खान विनियम, 2017 के विनियम, 196(3) के तहत नियमित नियंत्रित-ब्लास्टिंग करने के लिए अनुमति। महोदय,

कृपया उल्लिखित विषय पर आपके दिनांक 09.03.2018, 17.04.2018 एवं 12/13.07.2018 WBD/Agent(QAB)/217A/717/18, के पत्रांक WBD/Agent(QAB)/217A/726/18 WBD/Agent(QAB)/217A/780/18 को संदर्भित करें। एव Sir,

Please refer to your above mentioned letter and the enclosed Plan No. WBD/OC/AB/S/48/2018 (Sheet I & Sheet II) dated 12.07.2018 showing the area of controlled blasting marked as A1, A2, A3......A15, B20, C27, C26,C25.......C1, B1 and A1 on the above subject.

The matter has been considered and examined in the light of the particulars furnished by you. In exercise of the powers conferred on the Chief Inspector of Mines(also designated as Director General of Mines Safety) and by virtue of the authorization granted to me by the Chief Inspector of Mines (also designated as Director General of Mines Safety) under Section 6(1) of Mines Act, 1952, I hereby grant the permission under Regulation 196(3) of Coal Mines Regulations, 2017 for conducting deep hole blasting within danger zone of 500m but beyond a distance of 100m from the structures in coal and overburden at West Bokaro Colliery 'QAB' of M/s Tata Steel Limited as shown in Plan No WBD/OC/AB/S/48/2018 (Sheet I & Sheet II) dated 12.07.2018 for a period of 05 (Five) years from the date of issue of this letter, subject to strict compliance of the following

The blasting shall be carried out in close collaboration with a Scientific Agency/an Expert on the subject and further monitoring shall be done on the effects of blasting in quarry and on surface including vibration level at least up to a distance of 150m, 300m, and 500m all around

- Regular monitoring shall be done on the effects of every blasting in quarry and on surface including vibration level by the equipment provided at the mine.
- The restricted zone of 100m from the nearest building/house shall be clearly demarcated on the ground and the plan. No blasting shall be done within 100m of any village or bustee or any other public road or railway or structure.
- 4. The Manager of the mine shall specify the size, depth, spacing, burden of hole, explosive charges and sequence of delays etc. on the basis of the recommendations of the report of blasting studies done by CIMFR, Dhanbad and as mentioned in their report on blasting studies (Project no. CNP/4535/2017-18) dated February, 2018 so as to minimize ground vibration and occurrence of any flying fragments to a dangerous extent beyond a distance of 10m.
- The drilling, charging, stemming and blasting operation shall be carried out under the direct personal supervision of an Assistant Manager in accordance with the guidelines and directions of the Manager.
- Only Overman fully trained in controlled blasting technique shall be deputed for shot firing operation.
- 7. Charges: To carry out blasting within 500m but beyond 100m of the surface structure the aggregate charge of explosives in a series of shot holes connected to a particular delay number shall not exceed 17.0Kg at a distance of 100m from any structure to the blasting site. Beyond 100m, however, recommendations of the CIMFR experts given in the Study Report as indicated below shall be judiciously followed:

SI. No.	Distance in m.	Max. charge/delay in Kg.
1.	100	17
2.	150	38
3.	200	67
4.	250	105
5.	300	151
6.	350	205
7.	400	268
8.	450	339
9.	500	418

 It shall be ensured that ground vibrations are within permissible limits at foundation level of structures in mm/s as prescribed by DGMS Cir.No.7 of 1997 which is given below.

Type of structure	DOMINATING EXCITATION FREQUENCY (Hz)		
	<8 Hz	8-25Hz	>25 Hz
(A)Building/structure not belonging to owner	mm/S	mm/S	mm/S
(i) Domestic houses/structures (Kuchha, Brick in cement)	5	10	15
(ii) Industrial buildings (RCC) and framed structures	10	20	25
(iii) Object of historical importance and domestic structures	2	5	10
(B) Building belonging to owner with limited span of life (i)Domestic houses/structures (Kuchha, Brick in cement Industrial building (RCC) and framed structures	10	15	25
(ii) Industrial building (RCC) and framed structures	15	25	50

9. A proper record of every blast showing the observations regarding fly rocks and ground vibrations on surface along with the size, depth, pattern of holes, amount of charge, sequence of blasting etc. shall be maintained in a bound paged book. All entries in this book shall be duly signed by the Assistant Manager in-charge of the blasting operations and shall be countersigned by the Manager.

- Delay interval between holes in a row shall be 10 millisecond whereas between the rows it shall be 90 millisecond.
- 11. The blast holes shall be stemmed with only moist sand and the length of stemming column shall not be less than 1.2 times the burden of the holes.
- 12. Effective muffling of shots with proper muffling screens loaded with sufficient number of sand bags shall be done during blasting over the proposed blasting area and also on the face to ensure that the flying fragments do not project beyond a distance of 10m from the place of blasting.
- 13. No blasting shall be done in crushed, broken, sliced or fractured ground. Blast holes shall not be located close to any abandoned drill hole. No blasting shall be done in chocked face conditions. Drill holes shall be located beyond weak zones.
- No blasting shall be done under overcast sky and after sun set.
- Air overpressures during blasting shall not exceed 176 dB-(L) as prescribed for structural damage.
- 16. The surface over the area to be blasted and up to 10m around shall be cleaned of any loose material or stones etc.
- A free face shall always be maintained and blasted material cleared off before commencement of next round of blasting operation.
- Initiation of charge shall be done in a manner that detonation waves progress away from structures not belonging to the Owner.
- Only non electric type shock tube detonators shall be used in the holes and surface trunk lines.
- 20. The timing of the blasting shall be fixed by the Manager and as far as possible blasting shall be done only at the specified time in day light hours. The Manager shall fix up the blasting time which suits to the locality and it should be circulated to all concerned and displayed on the notice board. It shall also be communicated to the inhabitants of the villages falling in the danger zone.
- 21. A siren shall be provided for warning the people before blasting and to give all clear signal after blasting. The code of blasting signal shall be strictly followed as framed by the Manger.
- 22. All the HEMM such as shovel, drill machine, Dumpers including cables switches etc. shall be shifted to safe places before commencement of charging and blasting operation. Blast holes shall not be allowed to sleep after charging.
- All mobile telephones and other VHF/UHF transmitters must be switched off in the blasting area at the time of handling, charging and blasting of explosives.
- Provisions of clause (b) & (c) of Regulation 196 (2) of the Coal Mines Regulation, 2017 shall be complied within 100m of the place of blasting.
- Blasting with small diameter shot holes or secondary blasting shall not be done.
- 26. All other recommendations made in the report on blasting studies done by CIMFR, Dhanbad and as mentioned in their report on blasting studies (Project no. CNP/4535/2017-18) dated February, 2018 shall be strictly complied with.
- The blasting shall be done only in an area where fire does not exist.
- 28. Blasting shall be done after withdrawing persons who are in the danger zone of 500m.

- 29. The Management shall indemnify the Owners/occupants of the bustees and other houses/dwellings/railways/roads/administration and persons present therein/there at against any injury to them or damage to their property arising out of the blasting operations.
- 30. No detonator or explosive shall be brought or kept within 15m of electrical conductors of overhead lines to prevent dangers due to induction.
- 31. Please note that the above permission is subject to the following additional conditions:-
- 31.1 In the event of any change in the circumstances connected with this permission which are likely to endanger the life in or around the mine, the operation for which the permission has been granted shall be stopped forthwith and intimation thereof sent to this Directorate.
- 31.2 If, at any time, any one of the conditions subject to which the permission has been granted is violated or not complied with, this permission shall be deemed to have been revoked with immediate effect.
- 31.3 This permission is granted only under the specific regulations mentioned above and without prejudice to any other provision of law that may be or may become applicable at any time.
- This permission may be amended or withdrawn at any time if considered necessary in the interest of safety.
- 32.5 This permission shall remain valid for a period of five year from the date of issue of this letter.

खान सुरक्षा निदेशक, राँची क्षेत्र, राँची

Long at 14:31:37 September 3/2024

Trigger Source

Geo: 0.700 mm/s, Mic: 44.77 pa.(L)

Range **Record Time** Geo: 254.0 mm/s

3.0 sec at 1024 sps Operator/Setup: Operator/factoryA.MMB

Notes

Client: User Name: KUJAMA COLL. LODNA AREA BCCL

SOLAR INDUSTRIES INDIA LTD

General:

Location:

COAL MINES

Extended Notes

Microphone Linear Weighting

PSPL

4.049 pa.(L) at -0.063 sec

ZC Freq

1.1 Hz

Channel Test Check (Freq = 0.0 Hz Amp = 0 mv)

Tran	Vert	Long	
2.168	1.639	3.460	mm/s
7.4	8.1	7.4	Hz
0.657	1.235	0.468	sec
0.018	0.015	0.024	g
0.059	0.030	0.070	mm
Passed	Passed	Passed	
7.3	7.5	7.3	Hz
4.1	4.2	4.2	
	2.168 7.4 0.657 0.018 0.059 Passed 7.3	2.168 1.639 7.4 8.1 0.657 1.235 0.018 0.015 0.059 0.030 Passed Passed 7.3 7.5	2.168 1.639 3.460 7.4 8.1 7.4 0.657 1.235 0.468 0.018 0.015 0.024 0.059 0.030 0.070 Passed Passed Passed 7.3 7.5 7.3

eak Vector Sum 4.024 mm/s at 0.468 sec

Serial Number

File Name

UM20049 V 10-90FB Micromate ISEE

Battery Level

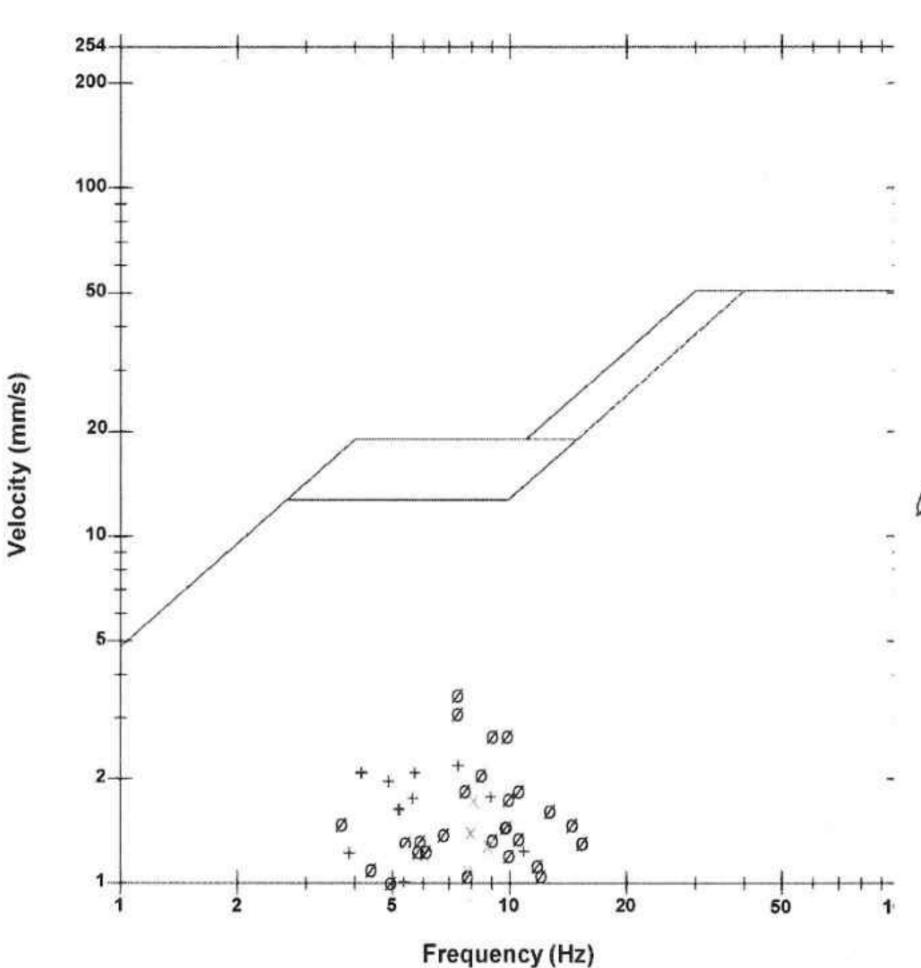
3.6 Volts

Unit Calibration April 13, 2023 by UES New Delhi

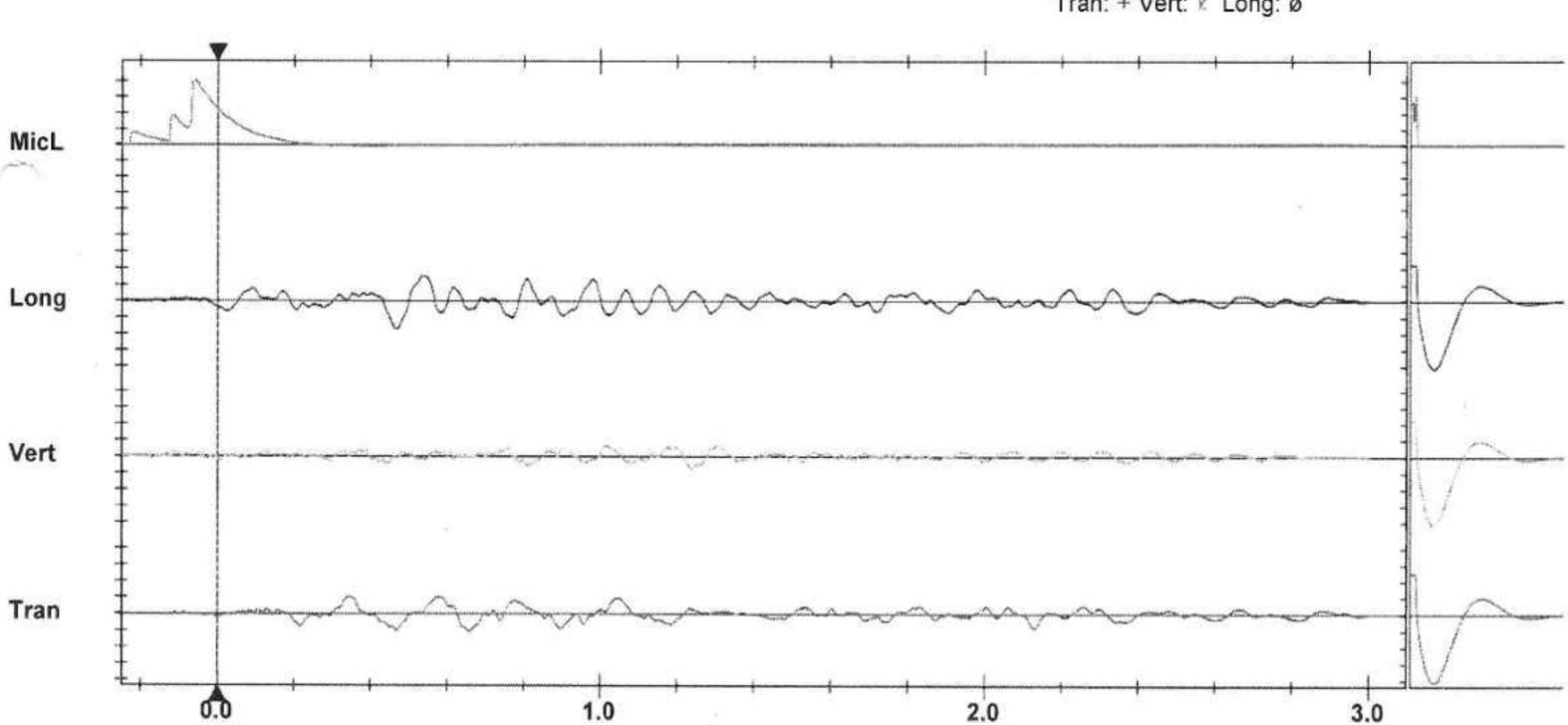
UM20049_20230903142237.IDFW

Post Event Notes

USBM RI8507 And OSMRE



Tran: + Vert: x Long: Ø



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div Trigger = ▶ ◀

Sensor Check

Printed: September 3, 2024 (V 10.72 - 10.72)

Format @ 1995-2014 Xmark Corporation

Long at 14:29:32 September 4, 2023

Range

Trigger Source Geo: 0.700 mm/s, Mic: 44.77 pa.(L) Geo: 254.0 mm/s

Record Time

3.0 sec at 1024 sps Operator/Setup: Operator/factoryA.MMB

Notes

KUJAMA COLL. LODNA AREA

Location: Client:

BCCL

SOLAR INDUSTRIES INDIA LTD User Name:

General:

COAL MINES

Extended Notes

Microphone Linear Weighting

PSPL

5.865 pa.(L) at 1.606 sec

ZC Freq

4.0 Hz

Channel Test Passed (Freq = 19.7 Hz Amp = 1197 mv)

	Tran	Vert	Long	
PPV	2.372	1.742	3.153	mm/s
ZC Freq	6.3	8.4	14	Hz
Time (Rel. to Trig)	2.649	2.729	0.347	sec
Peak Acceleration	0.020	0.030	0.029	g
Peak Displacement	0.062	0.031	0.046	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.5	7.3	Hz
Overswing Ratio	4.2	4.2	4.3	

ak Vector Sum 3.249 mm/s at 0.346 sec

FACE = XOB3

Serial Number

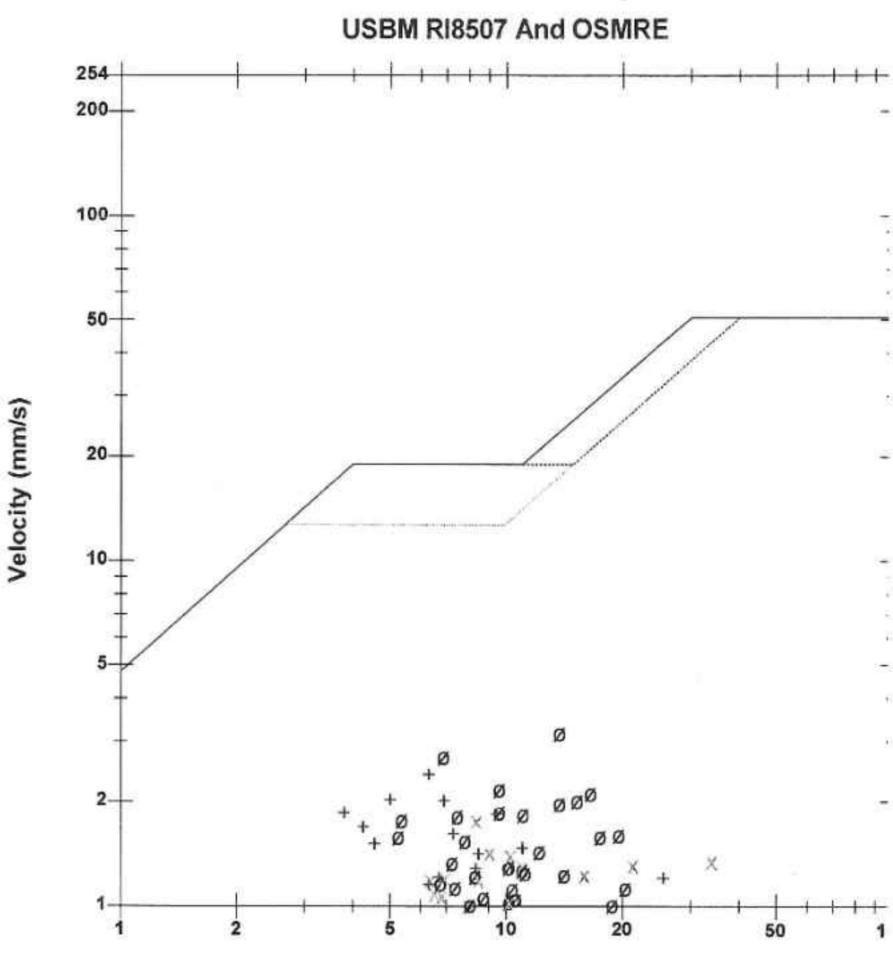
File Name

UM20049 V 10-90FB Micromate ISEE

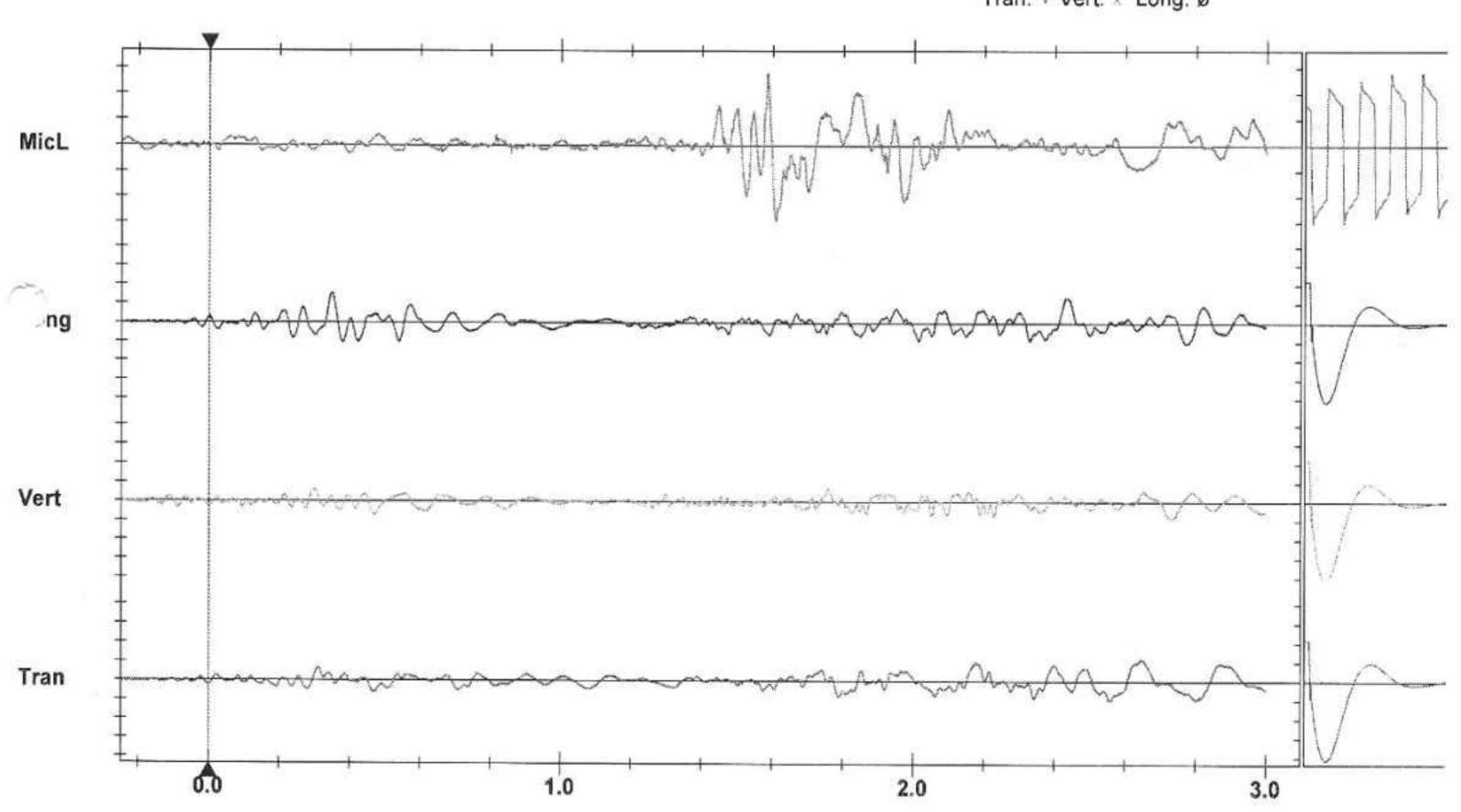
3.7 Volts

Battery Level

Unit Calibration April 13, 2023 by UES New Delhi UM20049_20230904141932.IDFW



Frequency (Hz) Tran: + Vert: x Long: Ø



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 2.000 pa.(L)/div Trigger = ▶ ◀

Sensor Check

Printed: September 4, 2024 (V 10.72 - 10.72)

sprapa

Long at 14:32:34 September 5, 2024

Trigger Source Geo: 0.700 mm/s, Mic: 44.77 pa.(L)

Range **Record Time** Geo: 254.0 mm/s

3.0 sec at 1024 sps Operator/Setup: Operator/factoryA.MMB

Notes

Client:

Location:

KUJAMA COLL. LODNA AREA

BCCL

SOLAR INDUSTRIES INDIA LTD User Name:

General:

COAL MINES

Extended Notes

Microphone

Linear Weighting

PSPL

11.92 pa.(L) at 2.437 sec

ZC Freq

7.3 Hz

Channel Test Passed (Freq = 19.7 Hz Amp = 1204 mv)

	Tran	Vert	Long	
PPV	2.593	2.215	2.435	mm/s
ZC Freq	7.1	7.9	9.1	Hz
Time (Rel. to Trig)	1.553	0.928	0.995	sec
Peak Acceleration	0.024	0.023	0.017	g
Peak Displacement	0.057	0.037	0.058	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.5	7.5	Hz
Overswing Ratio	4.2	4.2	4.2	

eak Vector Sum 2.978 mm/s at 0.990 sec

FACE = I ORY

Serial Number

UM20049 V 10-90FB Micromate ISEE

Battery Level 3.8 Volts

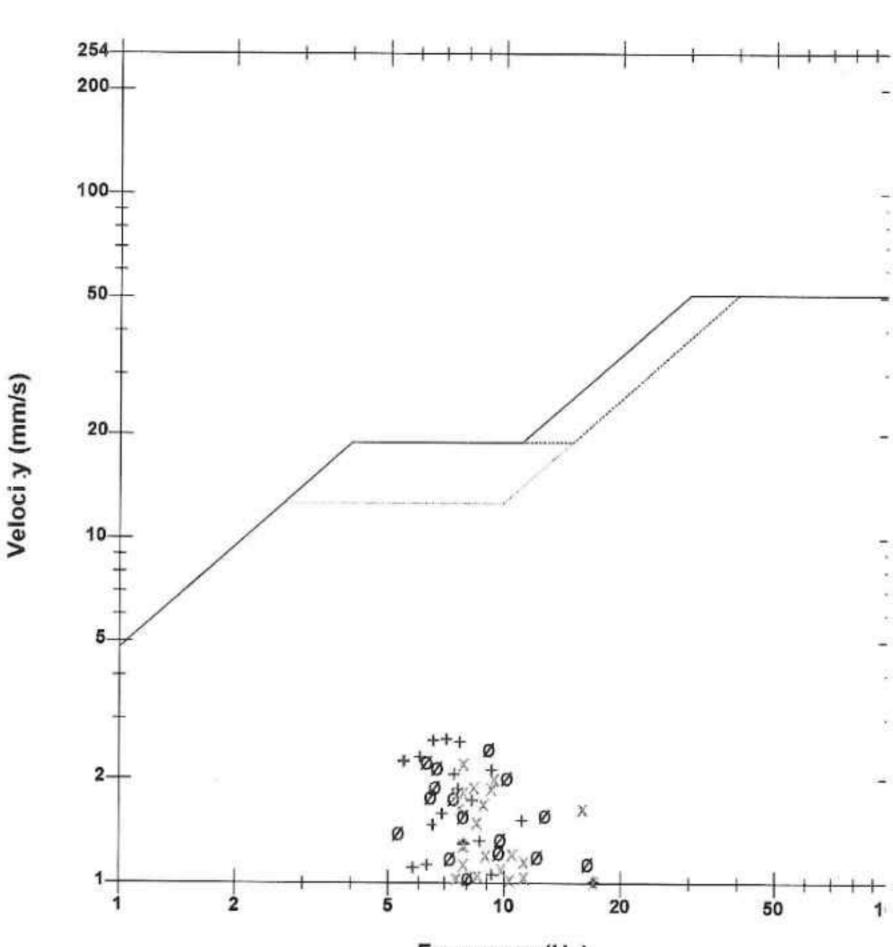
File Name

Unit Calibration April 13, 2023 by UES New Delhi

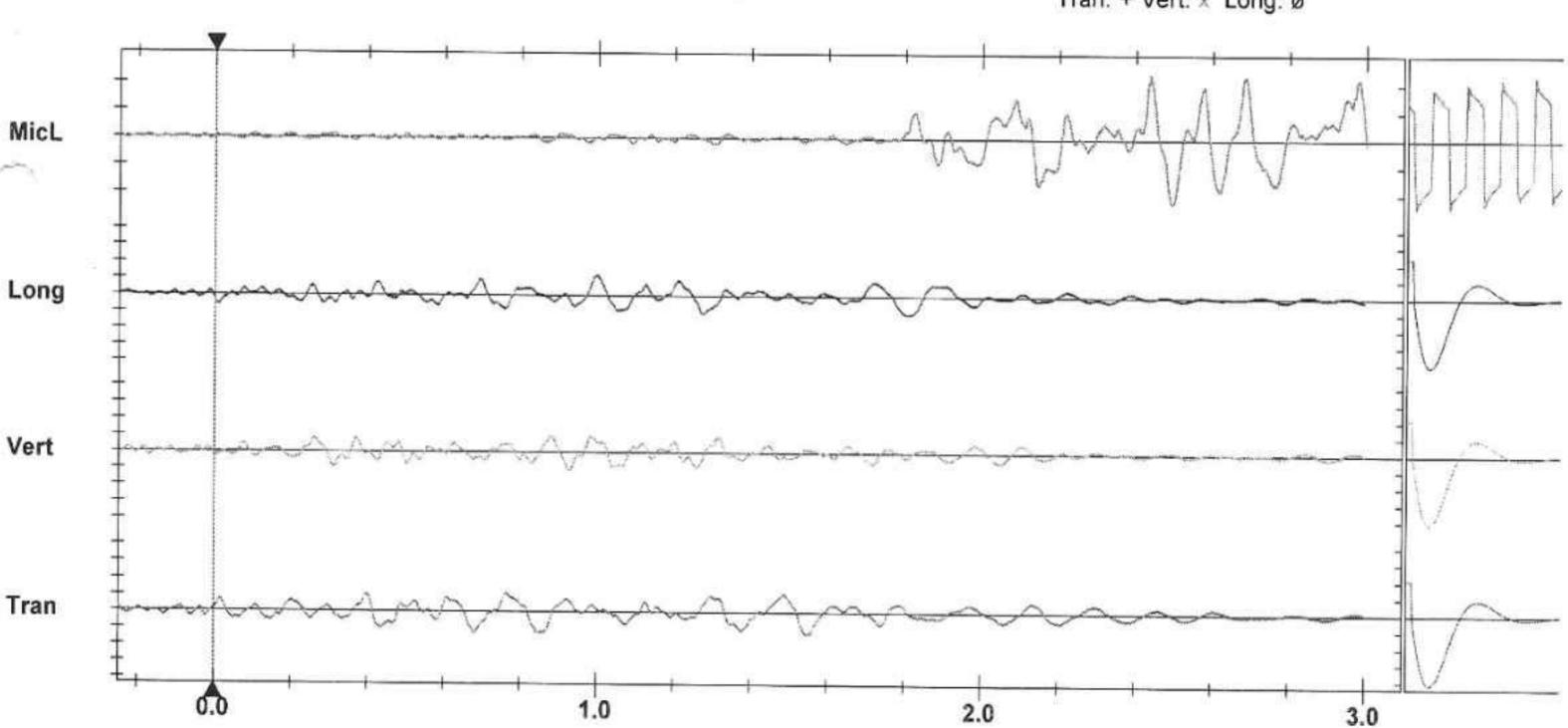
UM20049_20230905142434.IDFW

Post Event Notes

USBM RI8507 And OSMRE



Frequency (Hz) Tran: + Vert: x Long: Ø



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div Trigger = ▶

Sensor Check

Printed: September 5, 2024 (V 10.72 - 10.72)

Format @ 1995-2014 Xmark Corporation

Tran at 14:31:59 September 6, 2024

Range

Trigger Source Geo: 0.700 mm/s, Mic: 44.77 pa.(L) Geo: 254.0 mm/s

Record Time

3.0 sec at 1024 sps Operator/Setup: Operator/factoryA.MMB

Notes

KUJAMA COLL. LODNA AREA

Client:

Location:

BCCL

User Name: SOLAR INDUSTRIES INDIA LTD

General:

COAL MINES

Extended Notes

Microphone

Linear Weighting

PSPL

56.75 pa.(L) at 1.264 sec

ZC Freq

34 Hz

Channel Test Passed (Freq = 19.7 Hz Amp = 1249 mv)

	Tran	Vert	Long	
PPV	1.154	1.340	2.870	mm/s
ZC Freq	6.7	7.5	5.2	Hz
Time (Rel. to Trig)	0.282	0.297	0.219	sec
Peak Acceleration	0.029	0.016	0.021	g
Peak Displacement	0.107	0.028	0.092	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.5	7.3	Hz
Overswing Ratio	4.2	4.3	4.4	

eak Vector Sum 4.527 mm/s at 0.284 sec

FACE-XORY

Serial Number **Battery Level**

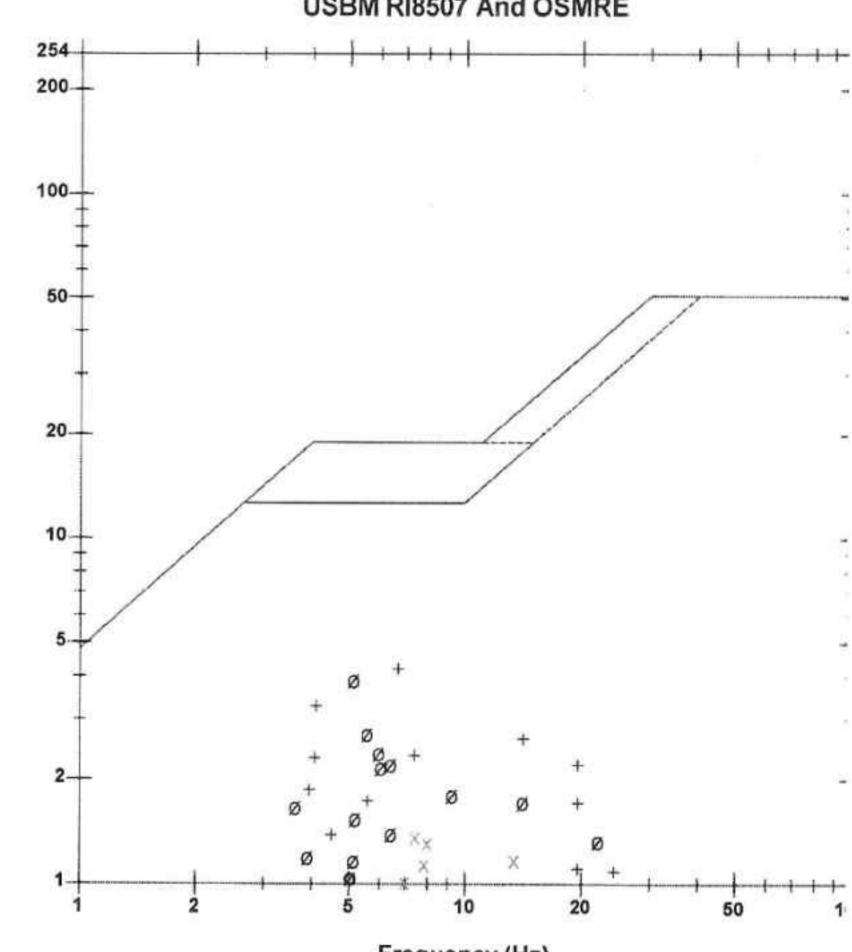
UM20049 V 10-90FB Micromate ISEE

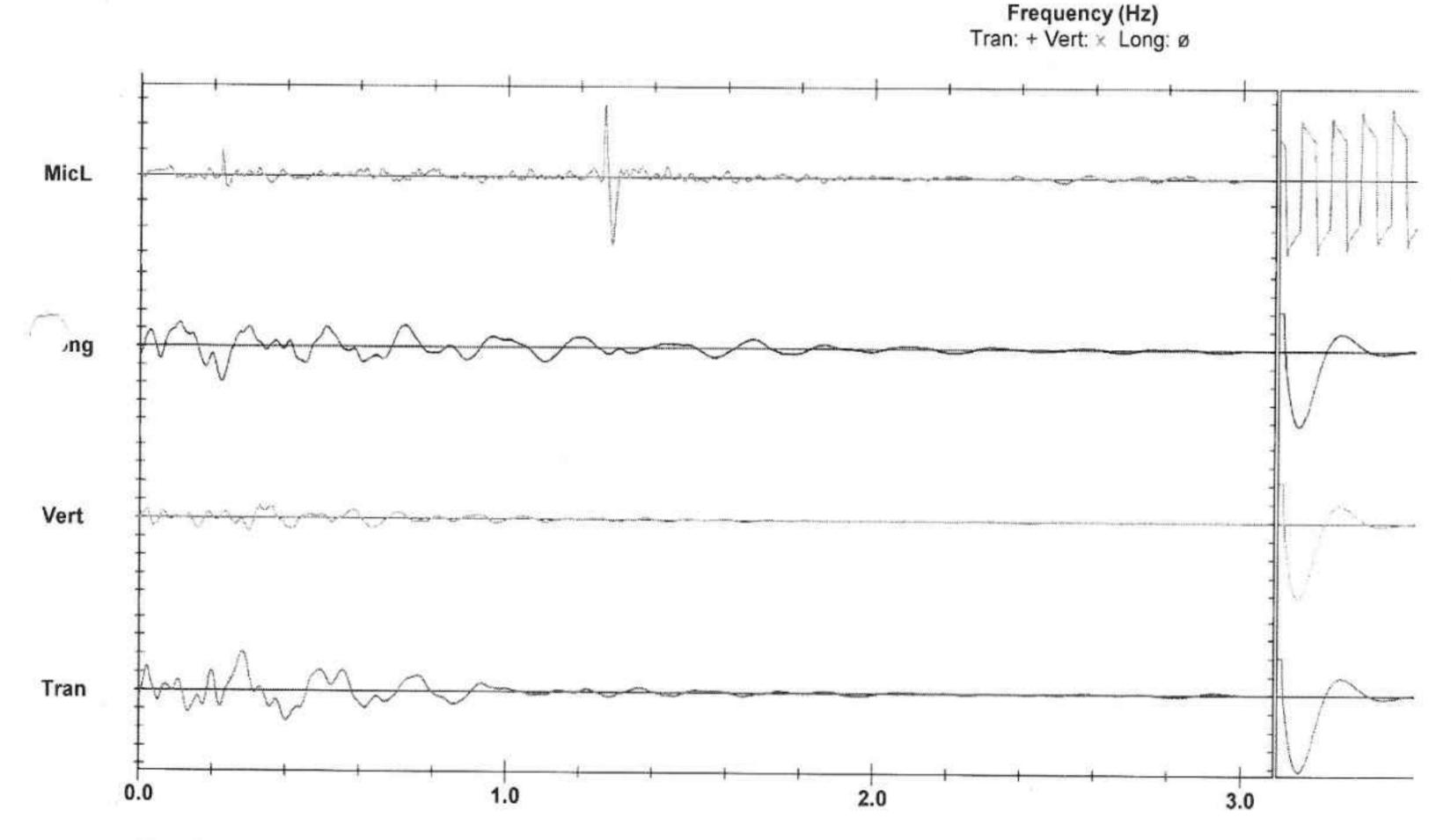
3.4 Volts

File Name

Unit Calibration April 13, 2023 by UES New Delhi UM20049_20230906142159.IDFW

USBM RI8507 And OSMRE





Velocity (mm/s)

Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 20.00 pa.(L)/div

Sensor Check

Printed: September 6, 2024 (V 10.72 - 10.72)

Format @ 1995-2014 Xmark Corporation

Tran at 14:30:24 September 11, 2024

Trigger Source

Geo: 0.700 mm/s, Mic: 44.77 pa.(L)

Range

Geo: 254.0 mm/s

Record Time

3.0 sec at 1024 sps Operator/Setup: Operator/factoryA.MMB

Notes

Location:

KUJAMA COLL. LODNA AREA

Client:

BCCL

SOLAR INDUSTRIES INDIA LTD User Name:

General:

COAL MINES

Extended Notes

Microphone Linear Weighting

PSPL

6.035 pa.(L) at 0.801 sec

ZC Freq

14 Hz

Channel Test Check (Freq = 0.0 Hz Amp = 0 mv)

	Tran	Vert	Long	
PPV	2.317	2.546	3.924	mm/s
ZC Freq	4.6	13	10	Hz
Time (Rel. to Trig)	0.157	0.302	0.742	sec
Peak Acceleration	0.022	0.052	0.029	g
Peak Displacement	0.052	0.029	0.054	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.5	7.3	Hz
Overswing Ratio	4.1	4.2	4.3	

eak Vector Sum 3.477 mm/s at 0.015 sec

Serial Number

UM20049 V 10-90FB Micromate ISEE

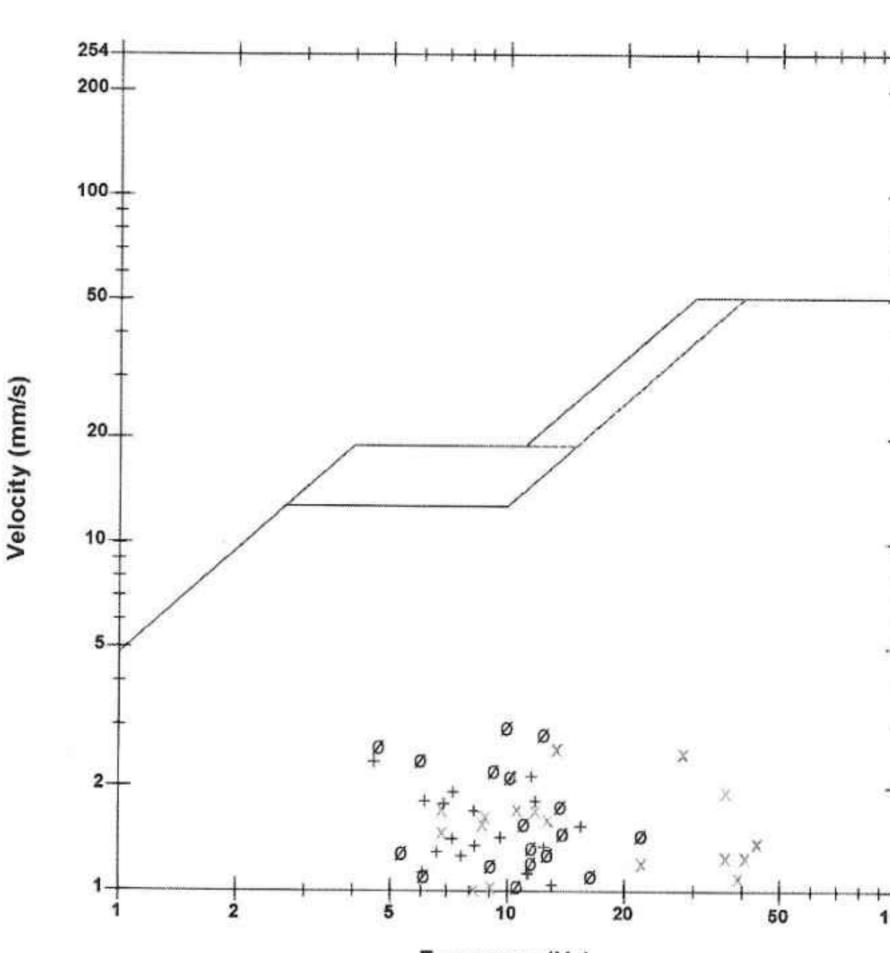
Battery Level 3.6 Volts

File Name

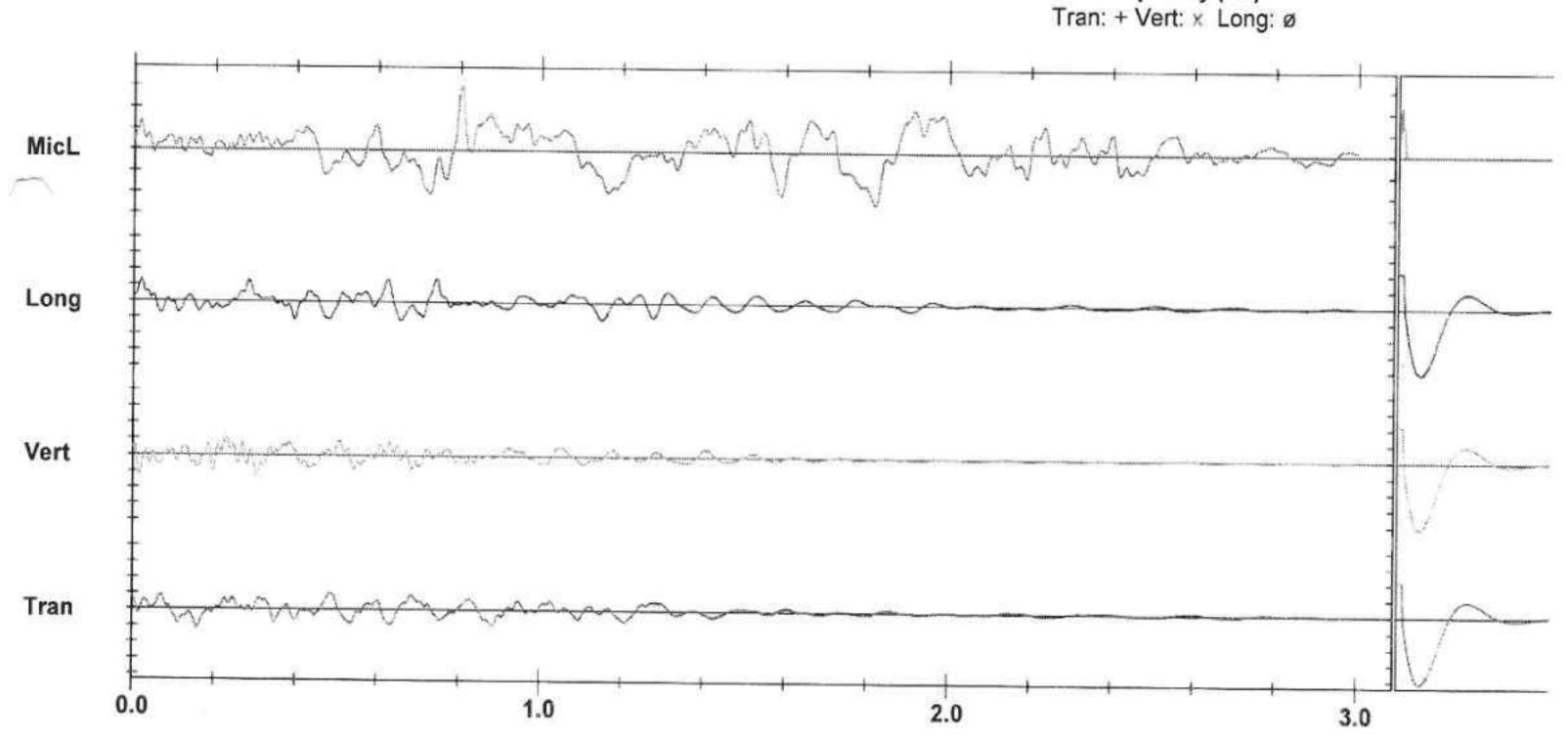
Unit Calibration April 13, 2023 by UES New Delhi UM20049_20230911142024.IDFW

Post Event Notes

USBM RI8507 And OSMRE



Frequency (Hz)



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 2.000 pa.(L)/div

Sensor Check

Printed: September 11, 2024 (V 10.72 - 10.72)

Format © 1995-2014 Xmark Corporation

Long at 14:33:03 September 14, 2024

Trigger Source Range

Geo: 0.700 mm/s, Mic: 44.77 pa.(L)

Record Time

Geo: 254.0 mm/s

3.0 sec at 1024 sps Operator/Setup: Operator/factoryA.MMB

Notes

Location:

KUJAMA COLL. LODNA AREA

Client:

BCCL

User Name: SOLAR INDUSTRIES INDIA LTD

General:

COAL MINES

Extended Notes

Linear Weighting Microphone

PSPL

21.29 pa.(L) at 2.243 sec

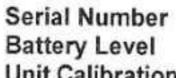
ZC Freq

17 Hz

Channel Test Passed (Freq = 19.7 Hz Amp = 1210 mv)

	Tran	Vert	Long	
PPV	2.955	2.190	3.829	mm/s
ZC Freq	6.9	7.9	12	Hz
Time (Rel. to Trig)	0.827	0.864	0.576	sec
Peak Acceleration	0.016	0.016	0.026	g
Peak Displacement	0.043	0.026	0.025	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.5	Hz
Overswing Ratio	4.1	4.2	4.2	

eak Vector Sum 2.449 mm/s at 0.576 sec

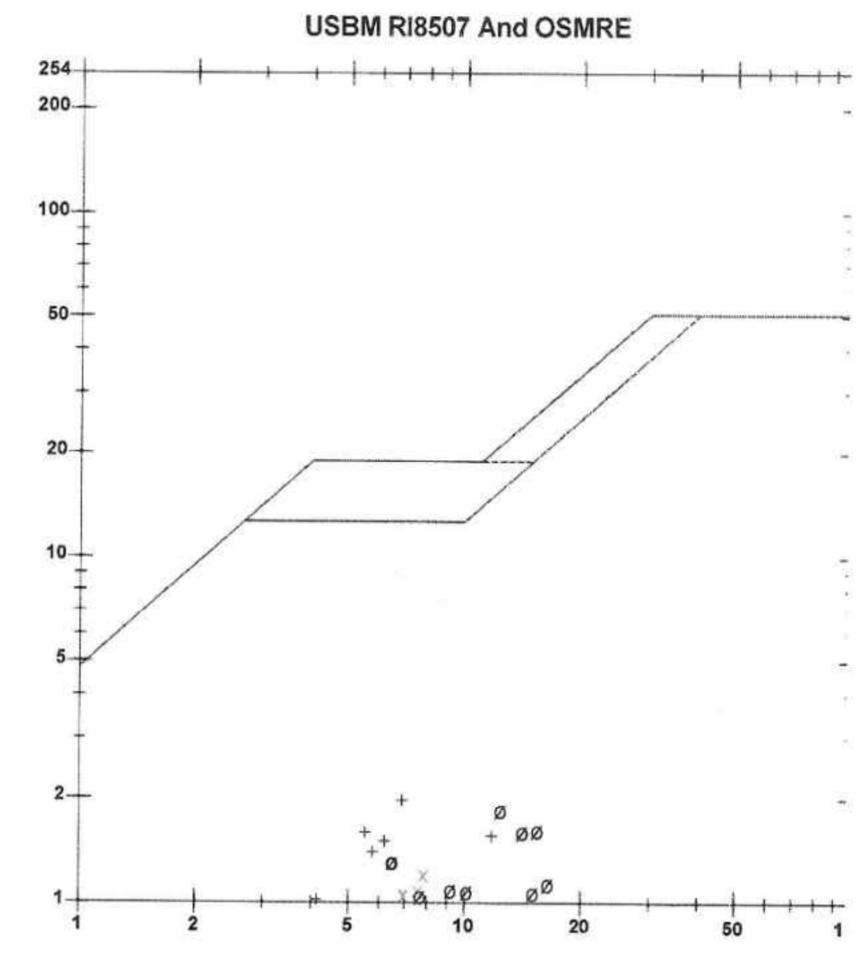


UM20049 V 10-90FB Micromate ISEE

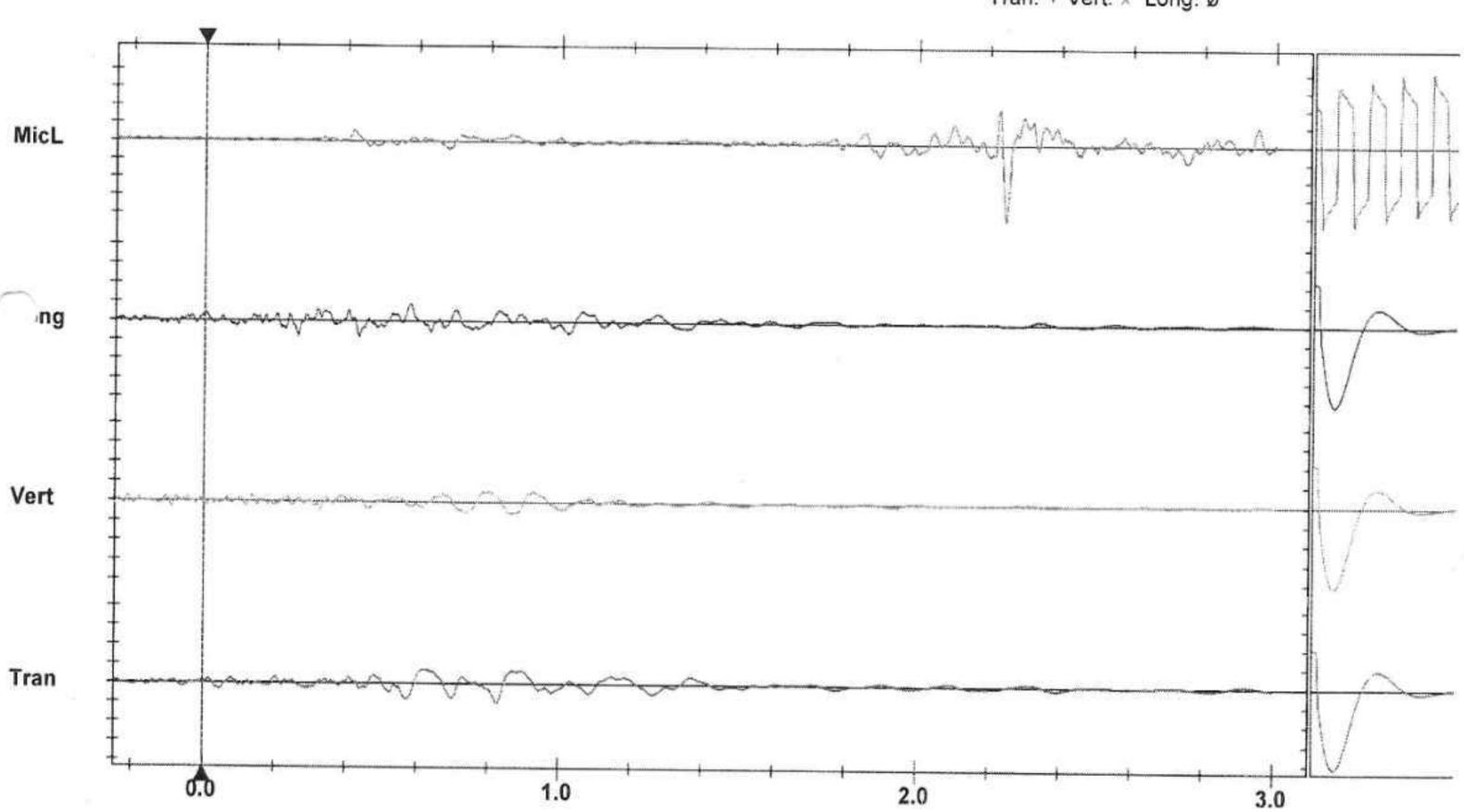
3.6 Volts

File Name

Unit Calibration April 13, 2023 by UES New Delhi UM20049_20230914142303.IDFW



Frequency (Hz) Tran: + Vert: x Long: Ø



Velocity (mm/s)

Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div Trigger = ▶

Sensor Check

Date/Time

Vert at 14:31:56 September 17, 2024

Trigger Source Range

Geo: 0.700 mm/s, Mic: 44.77 pa.(L)

Record Time

Geo: 254.0 mm/s 3.0 sec at 1024 sps

Operator/Setup:

Operator/factoryA.MMB

Notes Location:

RAJAPUR OCP SOUTH JHARIA

Client:

BCCL

User Name: SOLAR INDUSTRIES INDIA LTD

General:

COAL MINES

Extended Notes

Microphone

Linear Weighting

PSPL

9.837 pa.(L) at 2.179 sec

ZC Freq

7.2 Hz

Channel Test Passed (Freq = 19.7 Hz Amp = 1234 mv)

	Tran	Vert	Long	
PPV	1.422	2.546	2.002	mm/s
ZC Freq	6.9	8.5	8.8	Hz
Time (Rel. to Trig)	2.205	1.817	2.086	sec
Peak Acceleration	0.021	0.020	0.015	g
Peak Displacement	0.098	0.045	0.039	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.3	Hz
Overswing Ratio	4.2	4.2	4.3	

eak Vector Sum 4.736 mm/s at 2.208 sec

FARC = X OB3

Serial Number

UM20049 V 10-90FB Micromate ISEE

Battery Level

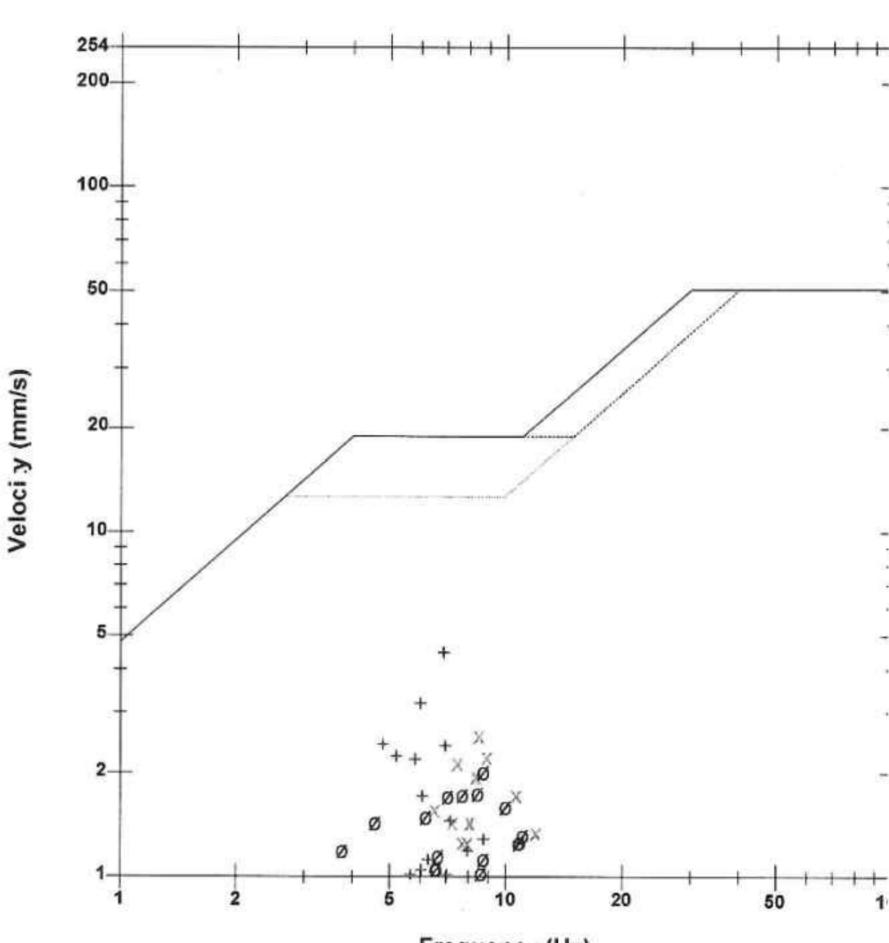
File Name

Unit Calibration April 13, 2023 by UES New Delhi UM20049_20230917141456.IDFW

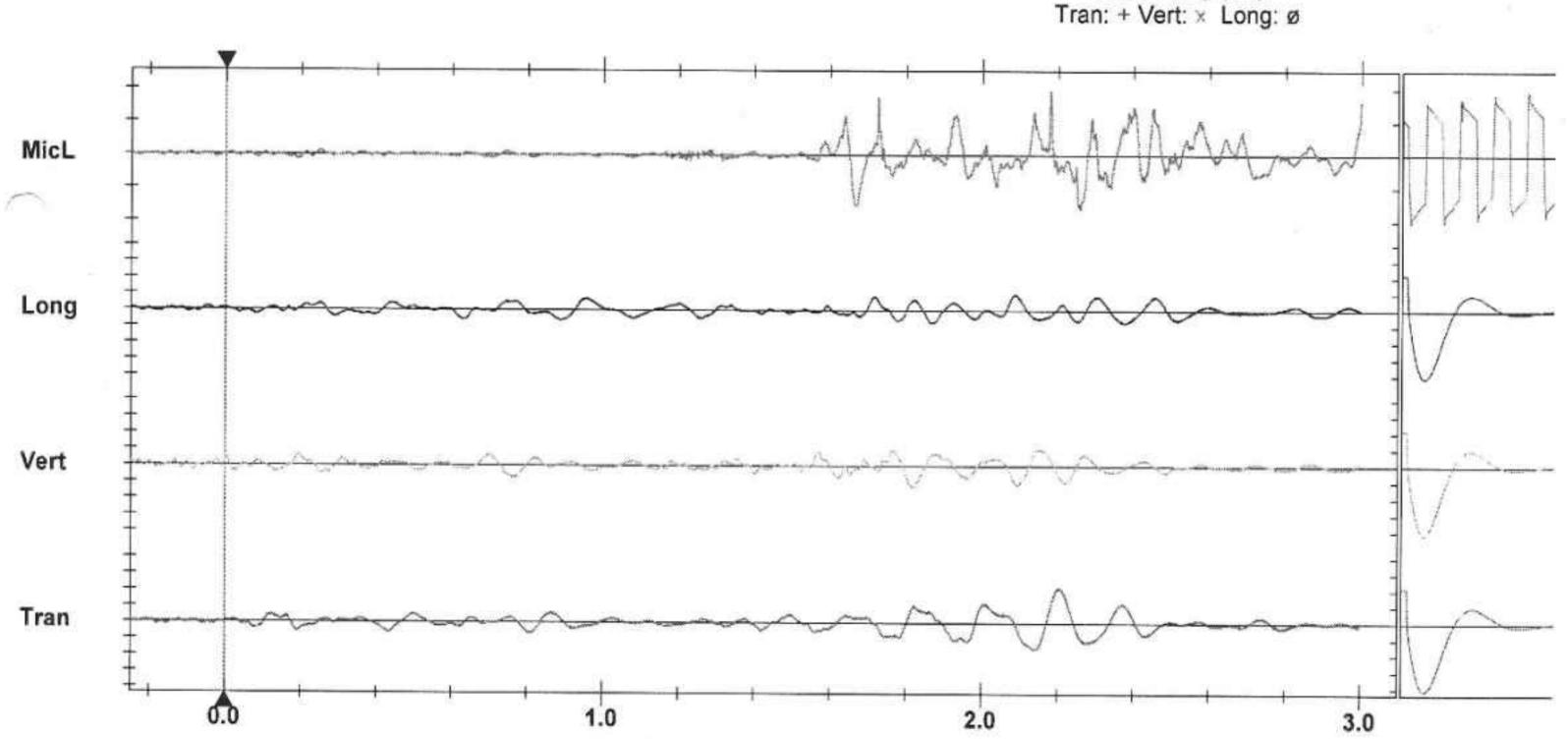
3.7 Volts

Post Event Notes

USBM RI8507 And OSMRE



Frequency (Hz)



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 5.000 pa.(L)/div Trigger = ▶

Sensor Check

Printed: September 17, 2024 (V 10.72 - 10.72)

Format @ 1995-2014 Xmark Corporation

Date/Time

Tran at 14:29:13 September 19, 2024

Trigger Source

Geo: 0.700 mm/s, Mic: 44.77 pa.(L)

Range **Record Time** Geo: 254.0 mm/s

3.0 sec at 1024 sps Operator/Setup: Operator/factoryA.MMB

Notes

KUJAMA COLL. LODNA AREA

Client:

Location:

BCCL

User Name: SOLAR INDUSTRIES INDIA LTD

General:

COAL MINES

Extended Notes

Microphone

Linear Weighting

PSPL

8.394 pa.(L) at 2.601 sec

ZC Freq

5.3 Hz

Channel Test Passed (Freq = 19.7 Hz Amp = 1195 mv)

	Tran	Vert	Long	
PPV	2.207	1.245	1.939	mm/s
ZC Freq	11	19	7.4	Hz
Time (Rel. to Trig)	1.001	0.653	1.004	sec
Peak Acceleration	0.022	0.018	0.018	g
Peak Displacement	0.045	0.024	0.047	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.5	7.3	Hz
Overswing Ratio	4.1	4.2	4.3	

ak Vector Sum 2.930 mm/s at 1.003 sec

Serial Number

File Name

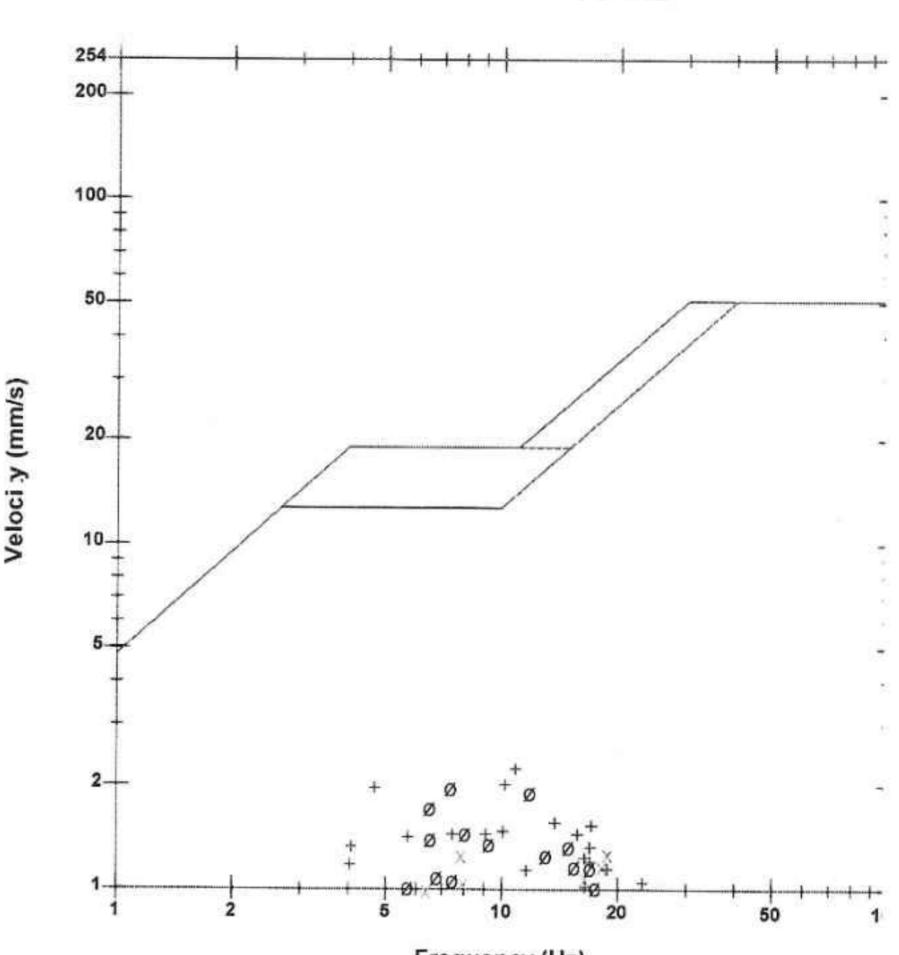
UM20049 V 10-90FB Micromate ISEE

Battery Level 3.6 Volts

Unit Calibration April 13, 2023 by UES New Delhi UM20049_20230919142013.IDFW

Post Event Notes

USBM RI8507 And OSMRE



Frequency (Hz)

Tran: + Vert: x Long: Ø MicL Long Vert Tran 1.0 2.0 3.0

Time Scale: 0.20 sec/div Amplitude Scale: Geo: 2.000 mm/s/div Mic: 2.000 pa.(L)/div Trigger = ▶

Sensor Check

Printed: September 19, 2024 (V 10.72 - 10.72)

Format @ 1995-2014 Xmark Corporation

.No. CC/MCPS/Release Order/2020-21/736

भारत सरकार

Government of India

कोयला मंत्रालय, कोयला नियंत्रक का कार्यालय

Ministry of Coal, Office of the Coal Controller

Email: coalcont-wb@nic.in cco.mcps-coal@gov.in

Scope Minar,5th Floor, Core-I Laxmi Nagar, Delhi- 110092 Dated: 33/09/2024

ORDER

Release of amount standing in the Escrow Accounts of Tata Steel Limited Mine

In pursuance of the Office Memorandum issued by the Ministry of Coal vide No. 34011/28/2019-CPAM on dated 29th May 2020 (hereinafter called "the OM"), the Nominated Owner has submitted claim application for release of fund from the Escrow Accounts delineating the works done for the purpose of progressive mine closure for the respective mine and claim period as per approved Mine Closure Plan. The said claim was duly audited by the Government Institution i.e CMPDIL,Ranchi and the inspection was completed by OSD, CCO, Ranchi.

Based on the Audit report of CMPDIL,Ranchi and Field Inspection Report of OSD, CCO, Ranchi, the Technical Committee members deliberated on the matter. After deliberation a total amount of INR.11,71,70,333-\ (Rupees Eleven Crore Seventy One Lakh Seventy Thousand Three Hundred Thirty Three only) out of the claimed amount was recommended for release in terms of the said OM.

On the basis of the recommendation of the Technical Committee, one notice was published and uploaded in the public domain i.e. official website of coal controller Organisation on 3rd, September, 2024. Fifteen days' time was given to any stakeholder for filling objection arising out of the intention to release the amount from the escrow accounts. The said time period of fifteen days expired on 18th September, 2024 without receiving any objection.

Now, the Coal Controller, on being satisfied that all the requirements to be undertaken by the Nominated Owner have been taken up and on satisfaction of the terms as per Para 2.12 of the said OM, hereby directs that the Amount of INR.11,71,70,333-\(Rupees Eleven Crore Seventy One Lakh Seventy Thousand Three Hundred Thirty Three only) be released from the respective Escrow Accounts of the coal mine of Tata Steel Limited as mentioned in ANNEXURE-I.

An intimation including latest bank statement in this regard may please be sent to this office, after release of the said amount by the Escrow Agent.

This is issued with the approval of Coal Controller.

Aarti Mahawar Dy. Director

Branch Manager,

State Bank of India, Commercial Client Group branch, Kolkata

Sribriddhi Bhavan, 2nd Floor, 34, Jawahar Lal Nehru Road Kolkata-700001.

रिपोर्ट की प्रतिलिपि प्रेषित:

- Nominated Owner, Tata Steel Ltd, Jeevan Bharti Building, 10th Floor, 124 Connaught Circus, New Delhi-110001.
- Head (Accounts), West Bokaro Collieries PO-Ghatotand. Dist-Ramgarh. Jharkhand-825314.
- 3. Head Planning, West Bokaro Division, Tata Steel Ltd.
- 4. OSD (CCO), Ranchi Jharkhand.
- 5. Office order File, CCO, Delhi.

Sr.No	Company Name	Mines Name	Escrow Account No	S STORMEN COME INSTITUTE OF	Amount to Release (Rs.)
1	Tata Steel limited	West Bokaro Colliery ,(P-I) (2015-16 to 2019- 20)	36448524496	State Bank Of India	11,71,70,333
				Total	11,71,70,333

(Rupees Eleven Crore Seventy One Lakh Seventy Thousand Three Hundred Thirty Three only)



कार्यालय:- वन प्रमंडल पदाधिकारी, रामगढ वन प्रमंडल ,रामगढ ।

पत्रांक :- 48 रामगढ, दिनांक:- 09-01-07-

सेवा में,

महा प्रबंधक वेस्ट बोकारो कोलियरी, घाटोटांड हजारीबाग।

बिषय:-

वेस्ट बोकारो कोलियरी घाटोटांड क्षेत्र के कोर एवं बर्फ जोन में उपलब्ध फ्लोरा एवं फौना का सत्यापन।

प्रसंग:--

आपका पत्र संख्या W.B.D/EMC/10/220/06 dt. 21.12.06

महाशय,

उपर्युक्त विषयक प्रसंगाधीन पत्र के आलोक में सूचित करना है कि घाटोटांड क्षेत्र के कोर एवं बर्फ जोन में उपलब्ध फ्लोरा एवं फौना का सत्यापन वन क्षेत्र पदाधिकारी, माण्डु से सम्पन्न कराया गया। सत्यापित फ्लोरा एवं फौना की सूची इस पत्र के साथ अत्र सह संलग्न भेजा जा रहा है। अनुलग्नक:— यथोक्त।

आपका विश्वासी

वन प्रमण्डल पदाधिकारी रामगढ़ वन प्रमण्डल रामगढ़

Table 2.14: Showing list of agriculture crops being cultivated in core zone and buffer zone.

LOCAL NAME	BOTANICAL NAME	FAMILY
A. CEREALS		
(i) Maize	Zea mays	Poaccae
(ii) Paddy +	Oryza sativa	Poaccae
(iii) Wheat	Triticum aestivum	Poaccae
B. PULSES		
(i) Arhar	Cajanus cajan	Papilionaceae
(ii) Khesari	Lathyrus sativus	Papilionaceae
(iii) Lentil	Lens culinaris	Papilionaceae
(iv) Chana (Gram)	Cicer arienthum	Papilionaceae
C. OIL YIELDING PLA	ANTS	
(i) Mustard	Brassica compestris	Brassicaceae
(ii) Castor	Ricinus communis	Euphorbiaceae
(iii) Flax (Tisi)	Euphorbiaceae	Lineaceae
D. SPICES		
(i) Coriander	Coriandrum sativum	Umbelliferae
(ii) Garlic	Allium sativum	Liliaeae
(iii) Ginger	Zingiber officinale	Zingiberaceae
(iv) Turmeric	Curcuma domestica	Zingiberaceae
E. VEGETABLES		
(i) Brinjal	Solanum melongena	Solanaceae
(ii) Tomato	Lycopersicum esculentum	Solanaceae
(iii) Bean	Lablab purpureus	Febaceae
(iv) Jhinga	Luffa acutangula	Cucurbitaceae
(v) Parol	Luffa cylindrica	Cucurbitaceae
(vi) Kohra	Benincasa hispida	Cucurbitaceae
(vii) Karela	Momordica charantia	Cucurbitaceae
(viii) Kakri	Momordica dioica	Cucurbitaceae
(ix) Kundari	Coccinia grandis	Cucurbitaceae
(x) Kadima	Cucurbita maxima	Cucurbitaceae
(xi) Kaddu	Lagenaria siceraria	Cucurbitaceae
F. FRUITS		
(i) Mango	Mangifera indica	Anacardiacea
(ii) Guava	Psidium guajava	Myrtaceae
(iii) Black Berry	Sysygium jambolana	Myrtaceae
(iv) Jackfruit	Artocarpus heterophyllus	Moraceae
(v) Bel	Aegle marmelos	Rutaceae
(vi) Papaya	Carica papaya	Caricaceae

साम् वस्योग

Chapter II

TABLE 2.15:- Showing plantation done by TATA COLLIERY in the Area of Ghato only.

LOCAL NAME	BOTANICAL NAME	FAMILY
(i) Parkinsonia	Parkinsonia aculeate	Mimosaeae
(ii) Cassia	Cassia siamea	Caesalpinaceae
(iii) Shisham	Dalbergia sissoo	Fabaceae
(iv) Karanj	Pongamia pinnata	Fabacea
(v) Babul	Acacia nilotica	Mimosaceae
(vi) Kattha	Acacia catechu	Mimosaceas
(vii) Herbs	Hemidesmus sps.	
(viii)	Vilonomia sps.	
(ix) Shrubs	Prosopis juliflora	
(x) Do	Ipomaea carnea	
(xi) Do	Bougenvillea spectabilis	

वन बाँग पवाधिकारी

BOTANICAL NAME	ural Vegetation in both core an COMMON NAME	Eco. Imp.
nnona squamosa	Custard apple	Fruit
cacia nilotica	Babul ·	Timber
Acacia catechu	Khair or Katha	Fruit
Artocarpus lakoocha	Barhal	Medicinal
Alstonia scholaris	Chatwan	Medicinal
Abutilon indicum	Kanghi	Medicinal
Allium sativum		Medicinal
Anthocephalus cadamba	Kadam	Medicinal
Aerava lanata	Chaya	Medicinal
Azadirachta indica	Neem	Medicinal
Ampelocissus latifolia	Janglee Angur	Medicinal
Argemone medicana	Pili katari or kataiya	Medicinal
Aigenione medicana	1 III ILLIANI OL NOVO	
Crotoloria en	Sea hemp or Sanai	Medicinal
Crotolaria sp. Cassia fistula	Amaltas	Medicinal
	Tora chakra	Medicinal
Cassia hirsute Cassia occedentalis	Barachakar	Medicinal
	Chakunda or Panwar	Medicinal
Cassia tora	Goose foot	Medicinal
Chenopodium album	Ghiwala	Medicinal
Callicarpa arborea	Kanduri	Medicinal
Coccinia grandis	Bhiu champa	Medicinal
Costus speciosus	Katkaranj	Medicinal
Caesalpinia bondocella	Kankaoa	Medicinal
Commelina benghalensis	Jaro or Arvi or Kachalu	Medicinal
Colocassia esculenta	Telegraph plant	Medicinal
Desmodium triflorum	Salpan	Medicinal
Desmodium ganeticum	Shisham	Medicinal
Dalbergia sissoo	Dhutra	Medicinal
Datural metal	Dhatura	Medicinal
Datura inoxia	Mislete	Medicinal
Dendrophthoe falcate	Not known	Medicinal
Dioscorea pentaphyla	Not known	Medicinal
D.alata		Medicinal
Eclipta alba	Bhangra Lal Patta or Dudhi	Medicinal
Euphorbia hirta		Medicinal
Euphorbia thymifolia	Chhoti Dudhi	Medicinal
Euphorbia granulate	Kantaarak	Timber
Ficus benghalensis	Bargad	Timber
Ficus glomerata	Gulhar	Timber
Ficus rumphil	Pakar	
Gmelina arborea Globba marantina	Sedge (Herb) Gamhar Indian Champa	Medicinal Medicinal Timber

BOTANICAL NAME	COMMON NAME	Eco. Imp.
Holarhaena pubesense	Kurchi	Medicinal
Heliotropium indicum	Hatisura	Medicinal
Hygrophila auriculata	Sag	Medicinal
Hyptis suaveolens	Not known	Medicinal
Indigofera hirsute	Nil (Dye)	Medicinal
Indigofera tinctoria	Nil	Medicinal
Inchncarpus frutescens	Kalidhudhi	Medicinal
Ipomoea aquatica	thethar	Medicinal -
BOTANICAL NAME	COMMON NAME	Eco. Imp.
Imperata cylindrical	Grass	Soil binder

BOTANICAL NAME	COMMON NAME	Eco. Imp.
Imperata cylindrical	Grass	Soil binder
Jatropha curcas	Rattan Jat	Medicinal
Jatropha gossypifolia	Safed arind	Medicinal
Madhuca latifolia	Mahua	Medicinal/Timber
Mangifera indica	Mango	Fruit/Timber
Launea nudicaulis	Tikchana	Medicinal
Luffa cylindrical	Ghia	Vegetable
Lantana camara	Putus	Shurb
Lagenaria ciceraria	Indian gourd (Lauki)	Shurb
Mallotus philippensis	Kamila	Medicinal
Melia azedarach	Drek	Medicinal
Mimosa pudica	Lajbanti	Medicinal
Moras alba	Sahtoot	Medicinal/Timber
Ocimum basilicum	Tulsi	Medicinal
Parkinsonia aculeate	Parkinson	Weed
Phoenix sylvestris	Kalki	Medicinal
Pongamia pinnata	Karanj	Medicinal
Phyllanthus simplex	Jar Amla	Medicinal
Phyllanthus urinaria	Jat Amla	Medicinal
Polygala chinensis	Polygonaceae	Medicinal
Pterocarpus marsupium	Bija	Colour
Ricinus communis	Arandi	Medicinal
Phyllanthus emblica	Amla	Medicinal
Rauwolfia serpentine	Sarp Gandha	Medicinal
Semicarpus anacardium	Bhilawa	Medicinal
Spondias pinnata	Hog Plum	Fruit
Syzgium cumini	Jamun	Fruit
Sida rhombifolia	Sida	Medicinal
Sida cordata	Malvaceae	Medicinal
Syzygium jambolana	Jamun	Fruit
Sida tora	Malvaceae	Medicinal
Shorea robusta	Sal	Timber
Terminalia chebula	Harra	Medicinal

बन क्षेत्र प्रवास सारह प्रवास

Terminalia arjuna	Arjun	Medicinal		
Termainalia bellarica	Bahera	Medicinal		
Termania tomentosa	Asan	Timber		
Tectona grandis	Sagwan	Medicinal/Timber		
Vitex negundo	Shamalu	Medicinal		
Vernonia indica	Chaljiri	Medicinal		
Tridax procumbense	Marigold	Medicinal		
Viscum urticulentum	Mistletoe	Medicinal		
Xanthium strumarium	Chhota Datura	Medicinal		
Ziziphus jejuba	Ber	Fruit		
Zizphus oenoplia	Ber	Fruit		
Zingiber officinale-	Ginger	Spice		

वन क्षेत्र पहाचिकारी

Table 2.17: Showing list of fauna elements found in the adjoining area/ forest zone.

A. ANIMALS	ZOOLOGICAL NAME
(a) MAMMALS (i) Lakarbagha (ii) Ban suar (iii) Monkey (iv) Jackal (v) Jungle Cat	Hyaena hyaena Schedule III Sus scrofa Schedule II Macaca silenus Schedule III Vulpes vulpes Schedule II Felis chaus Schedule II
(i) Karait (ii) Naja (iii) Dhorwa (iv) Garden Lizard (v) Python	Bungarus sp. Schedule IV Naja naja Schedule II Natrix sp., Schedule IV Calotes versecolor Schedule IV Python moleurus Schedule I
(i) Myna (ii) Crow (iii) Bagula (iv) Sparrow (v) Kite (vi) Parrot (vii) Kathforba (viii) Ban Murgi (ix) Bagro (x) Dark Crow	Acridotheres tristis Linn. Schedule IV Corvus macrorhynchos Schedule IV Ergetta alva Schedule Schedule IV Passer domesticus Schedule IV Haliastur Indus Schedule IV Psittacula curvier Schedule IV Dryocopus javensis Schedule IV Gallus gallus Schedule IV Passer sp. Schedule IV Phalacrocorax niger Schedule IV
(i) Birni (ii) Grosshopper (iii) Tidha (iv) Moth (v) Black Bee (vi) Bee (vii) Stem Borer	Polistis sp. Schedule IV Hierogylphus banian Schedule IV Schistocerca gregaria Schedule IV Antheria mylita Schedule IV Apis dorsata schedule IV Apis indica Schedule IV Chilo auricilia Schedule IV
(e) FISHES (i) Garai (ii) Mangoor (iii) Pothia (iv) Bokwa (v) Zebra	Channa punctatus Not Listed Clarius batrachus Not Listed Punctius ticta Not Listed Eutropichttys baacha Not Listed Danio rerio Not Listed

4604

Table 2.17: Showing list of fauna elements found in core zone.

. ANIMALS	ZOOLOGICAL NAME
A. MAMMALS (i) Jackal (ii) Cat (iii) Horse (iv) Dog (v) Buffalo (vi) Cow (vii) Goat (viii) Sheep (ix) pig	Vulpes vulpes Schedule II Felis domesticus Domestic Equus sp. Domestic Cannis familiaris Domestic Bubalus sp. Domestic Bos indica Domestic Ovis sp. Domestic Capra sp. Domestic Sus sp. Domestic
B. REPTILES	
(i) Dhorwa (ii) Karait (iii) Naja (iv) House Lizard	Natrix sp. Schedule IV Bungarus sp. Schedule IV Naja naja Schedule II Hemidactylus Not Listed
C. BIRDS	Name of the Control o
(ii) Myna (ii) Jungle Crow (iii) Sparrow (iv) Parrot (v) Dark Cow	Acridotheres tristis Schedule IV Corvus macrorhynchos ScheduleV Passer domesticus Schedule IV Psittacula cuvier Schedule IV Phalacrocorax niger Schedule V
D. INSECTS	
(ii) Birni (ii) Tidha (iii) Moth (iv) Grasshopper	Polistis sp. Schedule IV Schistocerca gregaria Schedule IV Antheria mylita Schedule IV Hieroglyphus banian Schedule IV
E. FISHES	
(i) Garai (ii) Mangoor	Channa punctatus Schedule V Clarius battachus Schedule V

बन होंग पदानि । ने माण्डू वन क्षे



REVISED

भारत सरकार जल शक्ति मंत्रालय जल संसाधन, नदी विकास और गंगा संरक्षण विभाग केन्द्रीय भूमि जल प्राधिकरण Government of India Ministry of Jal Shakti Department of Water Resources, River Development & Ganga Rejuvenation Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र) NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

West Bokaro Open Cast Coal Mine - Tata Steel Ltd.

At Post Ghatotand, West Bokaro Division, Tata Steel Ltd

Project Name:

Project Address:

	-,			100000											
Village:					nji		Block:	Mand	lu						
District: Ramgarh				garh				State:	Jhark	nand					
Pi	n Code:														
							_			aro Collie - 825314	ry, Tat	ta Steel	Limited	, P.o	
Ad	ddress of CO	GWB Re	egional Office	0.000						Region, 6 Dak Bang			536		
1.	NOC No.:		CGWA/NO	C/MIN/R	EN/1/2	2021/64	115								
2.	Application	No.:	21-4/228/J	H/MIN/20					Catego (GWRE	C. 70.00	Se	mi Critic	cal	al	
4.	Project Sta	itus:	Existing Gr	ound Wa	Water 5.				NOC T	уре:	Extension				
6.	Valid from	:	26/12/2021					7.	Valid u	Valid up to: 25/12/2023					
8.	Ground Wa	ater Abs	traction Pern	itted:											
	Fresh	Water		Saline	e Wate	r		De	ewatering	9		7	otal		
	m³/day	m³/y	ear m	³/day	m	m³/year m³/da		n³/day	m³/year		m³/day m³/ye		/year		
	0.00	0.0	00				20	0094.00	733	4378.00					
9.	Details of g	ground v	vater abstrac	ion /Dev	vatering	g struct	ures								
			Total Exi	sting No	.:0					Tota	l Prop	osed N	lo.:0		
			DW	DCB	BW	TW	MP	MPu	DW	DCB	BW	TW	MP	MPı	
	Dewatering	Structu	re* 0	0	0	0	0	7	0	0	0	0	0	1	
'DW	/- Dug Well; DO	CB-Dug-c	um-Bore Well; B	N-Bore We	ell; TW-T	ube Wel	l; MP-Mir	ne Pit;MP	u-Mine Pu	mps					
10.	Ground Water Abstraction/Restoration Charg					s paid ((Rs.):		18,406,240						
11.	Number of Piezometers(Observation wells) to be constructed/ monitored & Monitoring mechanism.			30/00/00/00 H	[1] [1] [1] [1] [1] [1] [1] [1] [1] [1]		Moi		Monitoring Mechanism						
									Manual		DWLR** DWLR W				
	**DWLR - Dig	gital Wate	r Level Recorder				2		0		1 1				

(Compliance Conditions given overleaf)

This is an auto generated document & need not to be signed.

Validity of this NOC shall be subject to compliance of the following conditions:

Mandatory conditions:

- Installation of tamper proof digital water flow meter with telemetry on all the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate.
- 2) Proponents shall mandatorily get water flow meter calibrated from an authorized agency once in a year.
- 3) Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 14 of Guidelines. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II of the guidelines.
- 4) Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.
- 5) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.
- 6) In case of mining project the firm shall submit water quality report of mine discharge/ seepage from Govt. approved/ NABL accredited lab.
- 7) The firm shall report compliance of the NOC conditions online in the website (www.cgwa-noc.gov.in) within one year from the date of issue of this NOC.
- 8) Industries abstracting ground water in excess of 100 m 3 /d shall undertake annual water audit through certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be required to reduce their ground water use by at least 20% over the next three years through appropriate means.
- Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.
- 10) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.

General conditions:

- 11) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).
- 12) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).
- 13) Proponents shall install roof top rain water harvesting in the premise as per the existing building bye laws in the premise.
- 14) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.
- 15) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.
- 16) Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.
- 17) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.
- 18) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.
- 19) In case of violation of any NOC conditions, the applicant shall be liable to pay the penalties as per Section 16 of Guidelines.
- 20) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.
- 21) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.
- 22) In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.
- 23) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.
- 24) Proponents, who have installed/constructed artificial recharge structures in compliance of the NOC granted to them previously and have availed rebate of upto 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, shall continue to regularly maintain artificial recharge structures.
- 25) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, pharmaceutical, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution as per Annexure III of the guidelines.
- 26) In case of new infrastructure projects having ground water abstraction of more than 20 m3/day, the firm/entity shall ensure implementation of dual water supply system in the projects.
- In case of infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.
- 28) In case of coal and other base metal mining projects, the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.
- 29) The NOC issued is conditional subject to the conditions mentioned in the Public notice dated 27.01.2021 failing which penalty/EC/cancellation of NOC shall be imposed as the case may be

This NOC is issued subject to the clearance of Expert Appraisal Committee (EAC) (if applicable).

(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)



To
Deputy Director General of Forests (C),
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, 2nd Floor,
Headquarter- Jharkhand State Housing Board,
Harmu Chowk, Ranchi, Jharkhand – 834002, Ranchi

Email: ro.ranchi-mef@gov.in

WBD/EMC/4071/040/24

Date: 31.05.2024

Sub: Groundwater Level Monitoring and Quality Report for the period of Pre-

Monsoon (May 2024)

Ref: Environmental Clearance letter no. J-11015/108/2016-IA.II(M) dated:

17.05.2007

Dear Sir,

We are conducting Ground Water Level Monitoring quarterly and Ground Water Quality Analysis annually in May month. Please find enclosed herewith monitoring report of Ground Water Level & Quality as **Annexure-I** and **Annexure-II** respectively.

Thanking you,

Yours faithfully,

Area Mgr. (Environment) West Bokaro Division

TATA Steel Limited

Copy to : The Chairman, Central Pollution Control Board, South end Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700107

(W. B.)



Annexure - I

Ground Water Level (bgl) Monitoring of existing Well of May 2024

Sl. No.	Location	Latitude	Longitude	May'23
1	Housing	23.792068	85.575390	0.95
2	Mukundbeda	23.794802	85.575524	2.45
3	Driver Hut	23.784555	85.556142	1.80
4	Pundi	23.779666	85.521478	1.85
5	Duni	23.756172	85.556454	2.15
6	Kedla Road	23.804268	85.574922	3.60
7	Jharna Basti	23.784335	85.581215	1.30
8	Birhor Village	23.808672	85.564011	4.40
9	Bhelgada Village	23.792068	85.575390	0.00
10	Chainpur Well No. 1	23.738282	85.569806	4.28
11	Chainpur Well No. 2 (Atna QLC)	23.742684	85.568130	6.95

Ground water (Well water) Quality Report attached for the month of May 2024 as annexure-II



Testing Laboratory

(A Constituent Board of Quality Council of India) ISO/IEC 17025:2017, ISO 9001:2015,ISO (OHSAS) 45001:2018 Certified

NABL ACCREDITED

Plot No. - I-B-17 (P) Sindri, Industrial Area,

P.O.- Domgarh, Dist.- Dhanbad

Jharkhand - 828107

Email ID: sindriaditi@gmail.com Website: aditimdservices.com Phone: 0326-2952377 (O)

Mobile: 09471358492, 09431512608

Date: 27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry M/S TATA STEEL LIMITED

> GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

1. Chainpur Well No. 2 Sample Code

Date of Sample Collection: 17/05/2024

Ref. No.: - ARDS/23-24/ GW/01

20/05/2024 to 26/05/2024 **Date of Testing**

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS 10500:2012		Test
No		Chainpur Well No.			Method
		2 (Well Water)	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	1.4	1.0	5.0	IS 3025 (P-10)
5.	pH	7.0	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	340	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	176.5	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	602	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	920	100 0.	2943	IS 3025 (P-14)
11	Calcium as Ca, mg/l	70.4	75	200	JS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	39.4	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	75.2	74		IS 3025 (P-45)
16.	Potassium as (K) mg/l	10.2	***	-	IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	78.87	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	6.3	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.45	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.2	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.04	0.15	NR	IS 3025 (P-34)

Continued on Page 2

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Mobile: 09471358492, 09431512608

- 2 -

SI.	PARAMETERS OF TEST		IS as	\$41000000000000000000000000000000000000	Test Method
No.		Chainpur Well No. 2	IS10500:2012		
		(Well Water)	Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	288	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	(S)		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	288	381	:-	IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.04	-	53	IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	2.5	(e.)	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.08	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample			IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/ GW/02 Date: 27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry : M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

Sample Code :

1. Kedla Road (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS 10500:2012		Test
No		Kedla Road (Well Water)			Method
			Desirable	Permissible	
1.	Colour, (Hazen Unit)	2	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	2.0	1.0	5.0	IS 3025 (P-10)
5.	pH	7.5	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	416	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	139.6	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	630	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	970	.=	8 5 1	IS 3025 (P-14)
11	Calcium as Ca, mg/l	80	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	51.8	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	70.2		-	IS 3025 (P-45)
16.	Potassium as (K) mg/l	17.6	-		IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	92.1	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	0.06	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.52	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.18	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.05	0.15	NR	IS 3025 (P-34)

Continued on Page 2

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Mobile: 09471358492, 09431512608

- 2 -

SI. No.	PARAMETERS OF TEST	VALUE Kedla Road (Well Water)	IS as per IS10500:2012		Test Method
		(vveii vvatei)	Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	182.4	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	100		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	182.4			IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.06	-		IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	2.8	-	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.09	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/ GW/03 Date:27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry : M/S TAT

M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

• Sample Code :

1. Birhor Village (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI. No	PARAMETERS OF TEST	VALUE	IS as per IS	10500:2012	Test
		Birhor Village (Well Water)			Method
			Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	NIL	1.0	5.0	IS 3025 (P-10)
5.	рН	8.2	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	252	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	69.8	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	386	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	590	1.50	1. 5 1	IS 3025 (P-14)
11	Calcium as Ca, mg/l	48	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	31.68	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	24.8		-	IS 3025 (P-45)
. 16.	Potassium as (K) mg/l	6.2			IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	17.3	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	2.4	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.28	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.22	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.02	0.15	NR	IS 3025 (P-34)

Continued on Page 2

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Mobile: 09471358492, 09431512608

- 2 -

SI.	PARAMETERS OF TEST		IS as per IS10500:2012		Test Method
No.		Birhor Village			
		(Well Water)	Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	240	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	120		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	240	.83	æ:	IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.02			IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	1.9	-	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.06	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/ GW/04 Date: 27/05/2024

TEST REPORT OF GROUND WATER

• Name of the industry : M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

Sample Code :

1. Driver Hut (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS	10500:2012	Test
No		Driver Hut (Well Water)			Method
			Desirable	Permissible	
1.	Colour, (Hazen Unit)	2	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	1.0	1.0	5.0	IS 3025 (P-10)
5.	pH	6.5	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	592	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	184.24	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	732	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	1120	-	85	IS 3025 (P-14)
11	Calcium as Ca, mg/l	118.4	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	71.04	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	85.2		-	IS 3025 (P-45)
. 16.	Potassium as (K) mg/l	21.0			IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	49.5	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	4.4	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.58	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.28	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.34	0.15	NR	IS 3025 (P-34)

Continued on Page 2

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- 2 -

SI.	PARAMETERS OF TEST	VALUE	IS as	IS as per	
No.		Driver Hut	IS10500:2012		
		(Well Water)	Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	202	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL			IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	202	- 3-		IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.04	-		IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	2.0	;=:	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.13	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services P.O. DOMGARH CON DHANBAD

Technical Manager Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/ GW/05 Date: 27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry : N

M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

Sample Code

1. Housing (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS	IS as per IS 10500:2012	
No		Housing (Well Water)			Method
			Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	1.0	1.0	5.0	IS 3025 (P-10)
5.	pH	7.7	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	548	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	104.7	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	596	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	910	·=·.	85	IS 3025 (P-14)
11	Calcium as Ca, mg/l	110.4	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	65.3	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	65.4		-	IS 3025 (P-45)
. 16.	Potassium as (K) mg/l	16.4	-	-	IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	93.79	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	7.1	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.30	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.24	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.02	0.15	NR	IS 3025 (P-34)

Continued on Page 2

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SI. No.	PARAMETERS OF TEST	VALUE Housing (Well Water)	IS as per IS10500:2012		Test Method
			Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	129.6	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	12		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	129.6		389	IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.02	+		IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	2.2	(*)	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.07	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services P.O. DOMGARH OHANBAD

Technical Manager Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/ GW/06 Date: 27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry : M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

Sample Code :

1. Chainpur Well No. 1(ATNA QLC)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS	10500:2012	Test
No		Chainpur Well No. 1 (Well Water)			Method
			Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	1.0	1.0	5.0	IS 3025 (P-10)
5.	pH	6.6	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO₃, mg/l	212	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	44.6	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	490	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	750	i a u	8 5 1	IS 3025 (P-14)
11	Calcium as Ca, mg/l	35.2	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	29.76	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	60.4			IS 3025 (P-45)
. 16.	Potassium as (K) mg/l	15.0	**	372	IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	44.6	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	3.85	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.32	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.18	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.02	0.15	NR	IS 3025 (P-34)

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SI. No.	PARAMETERS OF TEST	VALUE Chainnus Wall No. 1	IS as per IS10500:2012		Test Method
		Chainpur Well No. 1 (Well Water)			
			Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	350.4	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	128		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	350.4	æ	æ:	IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.02	-		IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	1.5	:=:	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.14	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/ GW/07 Date: 27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry : M/S TATAS

M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

Sample Code :

1. Pundi (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS 10500:2012		Test
No		Kedla Road			Method
		(Well Water)	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	Nil	1.0	5.0	IS 3025 (P-10)
5.	pH	7.8	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	208	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	65.9	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	380	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	580	1.50	8 5 1	IS 3025 (P-14)
11	Calcium as Ca, mg/l	32	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	30.7	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	38.4		-	IS 3025 (P-45)
16.	Potassium as (K) mg/l	6.2	-		IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	58.1	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	8.55	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.35	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.24	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.08	0.15	NR	IS 3025 (P-34)

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SI. No.	PARAMETERS OF TEST	VALUE Pundi (Well Water)	IS as per IS10500:2012		Test Method
			Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	182.4	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	(2)		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	182.4	381	æ:	IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.04	-		IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	1.5	:=:	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.08	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services P.O. DOMGARH OHANBAD

Technical Manager Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/ GW/08 Date: 27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry : M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

Sample Code :

1. Mukundbada (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS	10500:2012	Test
No		Mukundbada			Method
		(Well Water)	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	1.8	1.0	5.0	IS 3025 (P-10)
5.	pH	7.9	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	316	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	128	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	460	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	700	1.00	15 5 1	IS 3025 (P-14)
11	Calcium as Ca, mg/l	80	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	27.8	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	54.2		-	IS 3025 (P-45)
16.	Potassium as (K) mg/l	106	-		IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	39.8	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	4.7	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.40	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.18	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.1	0.15	NR	IS 3025 (P-34)

Continued on Page 2

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- 2 -

SI. No.	PARAMETERS OF TEST	VALUE Mukundbada (Well Water)	IS as per IS10500:2012		Test Method
			Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	124.8	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	100		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	124.8		æ	IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.06	-		IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	1.2	-	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.1	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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Mobile: 09471358492, 09431512608

Ref. No.: - ARDS/23-24/ GW/09 Date: 27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry : M/S TATA

M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

• Sample Code :

1. Duni (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS	10500:2012	Test
No		Duni			Method
		(Well Water)	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	1	1.0	5.0	IS 3025 (P-10)
5.	pH	7.3	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	220	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	54.3	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	574	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	880	19.0	1. 5 1	IS 3025 (P-14)
11	Calcium as Ca, mg/l	36.8	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	30.7	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	72.2		-	IS 3025 (P-45)
16.	Potassium as (K) mg/l	14.5	-		IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	85.5	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	5.4	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.45	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.30	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.08	0.15	NR	IS 3025 (P-34)

Continued on Page 2

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. 2 -

SI. No.	PARAMETERS OF TEST	VALUE Duni (Well Water)	IS as per IS10500:2012		Test Method
			Desirabl	Permissible	2
25.	Total Alkalinity as CaCO ₃ , mg/l,	360	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	120		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	360	380	3-2	IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.06	-		IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	2.0	-	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.08	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/ GW/10 Date: 27/05/2024

TEST REPORT OF GROUND WATER

• Name of the industry : M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

Sample Code :

1. Jharna Basti (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing : 20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS 10500:2012		Test
No		Jharna Basti			Method
		(Well Water)	Desirable	Permissible	
1.	Colour, (Hazen Unit)	1	5.00	15.0	IS 3025 (P-4)
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)
4.	Turbidity, NTU	1	1.0	5.0	IS 3025 (P-10)
5.	pH	8.2	6.5-8.5	No. Relax.	IS-3025 (P-11)
6.	Total Hardness as CaCO ₃ , mg/l	384	200	600	IS 3025 (P-21)
7.	Chloride as Cl, mg/l	188	250	1000	IS 3025 (P-32)
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)
9.	Total Dissolved Solids, mg/l	536	500	2000	IS 3025 (P-16)
10.	Electrical Conductivity, µmhos/cm	820	19.0	15 5 1	IS 3025 (P-14)
11	Calcium as Ca, mg/l	72	75	200	IS 3025 (P-40)
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)
14.	Magnesium as Mg, mg/l	48.96	30	100	IS 3025)P-46)
15.	Sodium as (Na) mg/l	45.8			IS 3025 (P-45)
. 16.	Potassium as (K) mg/l	11.5	*		IS 3025 (P-45)
17.	Sulphate as SO ₄ , mg/l	69.2	200	400	IS 3025 (P-24)
18.	Nitrate as NO ₃ , mg/l	1.1	45	No. Relax	IS 3025 (P-34)
19.	Fluoride as F, mg/l	0.36	1.0	1.5	IS 3025 (P-60)
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)
23.	Zinc as Zn, mg/l,	0.20	5	15	IS 3025 (P-49)
24.	Total Ammonia as N, mg/l	0.04	0.15	NR	IS 3025 (P-34)

Continued on Page 2

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- 2

SI. No.	PARAMETERS OF TEST	VALUE Jharna Basti	IS as	Test Method	
		(Well Water)	Desirabl e	Permissible	
25.	Total Alkalinity as CaCO3, mg/l,	81.6	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	120		IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	81.6		3=0	IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.08	(-)		IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	1.7	(-)	-	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.06	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample		be detected in 0 ml sample	IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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Ref. No.: - ARDS/23-24/ GW/11 Date: 27/05/2024

TEST REPORT OF GROUND WATER

Name of the industry : M/S TATA STEEL LIMITED

GHATOTAND, WEST BOKARO DIST. - BOKARO(JHARKHAND)

Sample Code :

1. Bhelgada Village (Well Water)

Date of Sample Collection:

17/05/2024

Date of Testing

20/05/2024 to 26/05/2024

TEST RESULT

SI.	PARAMETERS OF TEST	VALUE	IS as per IS	10500:2012	Test	
No		Bhelgada Village			Method	
		(Well Water)	Desirable	Permissible		
1.	Colour, (Hazen Unit)	2	5.00	15.0	IS 3025 (P-4)	
2.	Odour	Agreeable	Agreeable	Agreeable	IS 3025 (P-5)	
3.	Taste	Agreeable	Agreeable	Agreeable	IS 3025 (P-7)	
4.	Turbidity, NTU	2.9	1.0	5.0	IS 3025 (P-10)	
5.	рН	7.6	6.5-8.5	No. Relax.	IS-3025 (P-11)	
6.	Total Hardness as CaCO ₃ , mg/l	536	200	600	IS 3025 (P-21)	
7.	Chloride as CI, mg/I	110.5	250	1000	IS 3025 (P-32)	
8.	Res. Free chlorine as Cl ₂ mg/l	NIL	0.20	1.0	IS 3025 (P-26)	
9.	Total Dissolved Solids, mg/l	550	500	2000	IS 3025 (P-16)	
10.	Electrical Conductivity, µmhos/cm	840	i n u.	1. 5 1	IS 3025 (P-14)	
11	Calcium as Ca, mg/l	107.2	75	200	IS 3025 (P-40)	
12.	Copper as Cu, mg/l	BDL	0.05	1.5	IS 3025 (P-42)	
13.	Manganese as Mn, mg/l	BDL	0.10	0.30	IS 3025 (P-59)	
14.	Magnesium as Mg, mg/l	64.3	30	100	IS 3025)P-46)	
15.	Sodium as (Na) mg/l	80.2	44	-	IS 3025 (P-45)	
. 16.	Potassium as (K) mg/l	20.5	-	372	IS 3025 (P-45)	
17.	Sulphate as SO ₄ , mg/l	59.4	200	400	IS 3025 (P-24)	
18.	Nitrate as NO ₃ , mg/l	3.2	45	No. Relax	IS 3025 (P-34)	
19.	Fluoride as F, mg/l	0.50	1.0	1.5	IS 3025 (P-60)	
20.	Phenolic Compound as (C6H5OH) mg/l	BDL	0.001	0.002	IS 3025 (P-43)	
21.	Sulphide as H2 S, mg/l	BDL	0.05	NR	IS 3025 (P-29)	
22.	Total Arsenic as As, mg/l	BDL	0.01	No. Relax	IS 3025 (P-37)	
23.	Zinc as Zn, mg/l,	0.28	5	15	IS 3025 (P-49)	
24.	Total Ammonia as N, mg/l	0.1	0.15	NR	IS 3025 (P-34)	

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SI. No.	PARAMETERS OF TEST	VALUE Bhelgada Village	IS as per IS10500:2012		Test Method
		(Well Water)	Desirabl e	Permissible	
25.	Total Alkalinity as CaCO ₃ , mg/l,	86.4	200	600	IS 3025 (P-23)
26.	Aluminum as Al, mg/l	BDL	0.03	0.2	IS 3025 (P-55)
27.	Acidity as Caco3, mg/l	NIL	-	-	IS 3025 (P-22)
28.	Boron as B, mg/l	BDL	0.5	1.0	IS 3025 (P-57)
29.	Carbonate as CaCO ₃ , mg/l	NIL	-	-	IS 3025 (P-23)
30.	Bicarbonate as CaCO ₃ , mg/l	86.4	12.5		IS 3025 (P-23)
31.	Phosphorous as (P) mg/l	0.08	·*	-	IS 3025 (P-31)
32.	Nickel as (Ni) mg/l	BDL	0.02	No Relax	IS 3025 (P-54)
33.	Total Chromium as (Cr) md/l	BDL	0.05	No Relax	IS 3025 (P-52)
34.	Suspended Solid mg/l	2.6	8	20	IS 3025 (P-17)
35.	Iron as Fe, mg/l	0.12	1.0	No Relax	IS 3025 (P-53)
36.	E. coliform	Not detected to any 100ml sample	Shall Not be detected in any 100 ml sample		IS 1622
37.	Total coliform	Not detected to any 100ml sample	Shall Not	be detected in 0 ml sample	IS 1622

NOTE: BDL - Below Detection Limit

Sr. Chemist Aditi R&D Services



Technical Manager Aditi R&D Services, Sindri

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To

Deputy Director General of Forests (C),
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, 2nd Floor,
Headquarter- Jharkhand State Housing Board,
Harmu Chowk, Ranchi, Jharkhand – 834002, Ranchi

Email: ro.ranchi-mef@gov.in

WBD/EMC/4071/073/24

Date: 14.08.2024

Sub: Groundwater Level Monitoring Report for the period of August 2024.

Ref: Environmental Clearance letter no. J-11015/108/2016-IA.II(M) dated:

17.05.2007

Dear Sir,

We are conducting Ground Water Level monitoring on quarterly basis. Please find enclosed here with monitoring report of ground water level for monsoon season (August 2024) as Annexure-I.

Thanking you,

Yours faithfully,

Manager (Environment) West Bokaro Division

TATA Steel Limited

Copy to : The Chairman, Central Pollution Control Board, South end Conclave, Block 502, 5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700107

(W. B.)



Annexure - I

Ground Water Level (bgl) Monitoring of existing Well of August 2024

Sl. No.	Location	Latitude	Longitude	August'23
1	Housing	23.792068	85.575390	0.48
2	Mukundbeda	23.794802	85.575524	0.97
3	Driver Hut	23.784555	85.556142	0.80
4	Pundi	23.779666	85.521478	0.85
5	Duni	23.756172	85.556454	1.20
6	Kedla Road	23.804268	85.574922	1.90
7	Jharna Basti	23.784335	85.581215	1.02
8	Birhor Village	23.808672	85.564011	0.77
9	Bhelgada Village	23.792068	85.575390	0.00
10	Chainpur Well No. 1	23.738282	85.569806	1.90
11	Chainpur Well No. 2 (Atna QLC)	23.742684	85.568130	0.70



To

Deputy Director General of Forests (C),
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, 2nd Floor,
Headquarter- Jharkhand State Housing Board,
Harmu Chowk, Ranchi, Jharkhand – 834002, Ranchi

Email: ro.ranchi-mef@gov.in

WBD/EMC/4071/102/24

Date: 22.11.2024

Sub: Groundwater Level Monitoring Report for the Post-Monsoon period (November

2024)

Ref: Environmental Clearance letter no. J-11015/108/2016-IA.II(M) dated: 17.05.2007

Dear Sir,

Please find enclosed here with monitoring report of ground water level for Post-Monsoon season as **Annexure-I.**

Thanking you, Yours faithfully,

Manager (Environment)

West Bokaro Division

TATA Steel Limited

Copy to : The Chairman, Central Pollution Control Board, Southern Conclave, Block 502,

5th & 6th Floors, 1582 Rajdanga Main Road, Kolkata - 700107 (W. B.)



Annexure - I

Ground Water Level of existing wells (Post-Monsoon period (November 2024)

Sl. No.	Location	Latitude	Longitude	August'23
1	Housing	23.793323	85.574833	0.55
2	Mukundbeda	23.794802	85.575524	3.60
3	Driver Hut	23.784555	85.556142	1.90
4	Pundi Village	23.779666	85.521478	1.30
5	Duni Village	23.756172	85.556454	0.35
6	Kedla Road	23.804268	85.574922	3.90
7	Jharna Basti	23.784335	85.581215	1.0
8	Birhor Village	23.808672	85.564011	2.0
9	Bhelgada Village	23.792068	85.575390	0.0
10	Chainpur Well No. 1	23.738282	85.569806	5.27
11	Chainpur Well No. 2	23.734670	85.573745	2.80

Dated: 2020-12-30

JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004 Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Ref No. JSPCB/HO/RNC/CTO-8604352/2020/1993

Consent to operate (CTO) under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

 Application (s) dated 2020-08-30 of West Bokaro Colliery, TATA Steel Ltd., Occupier Name: Manish Mishra for consent under section 25 (1)(b)/25 (1) (c)/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(1) of the Air (Prevention & Control of Pollution) Act, 1981..

2. Documents Relied Upon:

- (a) The content of Environmental Clearance Ref. No. J-11O15/108/2006-IA.II(M), dated 17.05.2007.
- (b) The content of Consent-to-Establish (CTE), vide Ref No N-565 Dated 17.12.2005, JSPCB, Ranchi;
- (C)The content of Consent to Operate(CTO), vide Ref. No. JSPCB/HO/RNC/CTO-82642/2016/192 dated 08.07.2016, JSPCB, Ranchi;
- (d)The content of Inspection Report (I/R), Ref No 1105, Dated 13.11.2020 of Regional Officer, Regional Office-Cum-Laboratory, JSPC Board, Hazaribagh;
- 3. The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to operate the project in Mauza -Parsabeda, Barughutu etc., P S -Ghatotand, District -RAMGARH, as follows:

Project Site-Area			Investment (Rs)	Product & Capacity	Period of CTO
	Plot Nos.	Area			Date of issue To
Before Expansion	634P, 504, 48, 263, 514 etc Khata No.:97, 07, 38, 05, 11 etc (as per previous CTO)	1740 Ha (as per previous CTO)	1457.95 Crore (as per application)	Raw Coal - 7 MTPA	31/12/2025

(A) Specific Conditions:

1. That, the occupier shall operate crushers at CHP with high efficiency bag filters, water sprinkling system

to check fugitive emission.

- 2. That, the occupier shall install ETP for workshop, coal washery & CHP waste water.
- 3. That, the occupier shall construct toe wall and garland drain around the OB dump.
- 4. That, the occupier shall reclaim mined out areas with OB and shall plant trees on them.
- That, the occupier shall construct catch drain, siltation pond retaining wall of appropriate size to arrest silt & sediment flows from soil, OB dump and mineral dump.
- 6. That, the occupier shall do Over Burden management properly as prescribed in environmental clearance.
- That, the occupier shall inform to Regional Office-Cum- Lab, Hazaribagh and Head Office, JSPC Board, at Ranchi within 24 hrs from the time of closure or opening of the plant.
- 8. That, the occupier shall comply and submit point wise compliance report of condition of this Consent to operate and Environmental Clearance on half yearly basis.
- 9. That, the occupier shall install and operate fix type water sprinkling system to check fugitive emission at hall roads ,coal transportation road and mining lease area wherever necessary.
- 10. That, the occupier shall use only covered vehicle in coal transportation.
- That, the occupier shall obtain authorization under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
- 12. That, the occupier shall if be found violating the Consent to Operate at any point of time during inspection of the plant by the competent authority, the Consent to Operate shall be revoked as per provision of the acts.
- 13. That, this CTO is valid subject to compliance of EC conditions.
- 14. That, this CTO is valid subject to any further order/decision given by JSPCB/CPCB/MoEF/Other concerned organization.
- 15. That, the occupier shall ensure proper arrangement for washing of wheel of the vehicles used for transportation of coal and shall also provide facility of forger at railway siding.
- 16. That, the occupier shall install CAAQMS and PM 10 analyzer within 3 months from the date of issuance of this CTO and operate the same with connectivity to JSPCB server.
- 17. That, the occupier shall operate and maintain the ETP installed for workshop, Mine Water & CHP waste water.

- 18. That, the occupier shall operate well equipped environmental laboratory with facilities to monitor at least all regulatory parameters and duly accredited by NABL.
- 19. That, the occupier shall install a combined STP for its West Bokaro area and comply all condition(s)of Environmental Clearance.
- 20. That, the occupier shall comply the provision of Charter on Corporate Responsibilities recommended by Central Pollution Control Board.
- 21. That, the occupier shall submit applications for renewal of consent under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days prior to the date of expiry of this consent with documents showing compliance of all of the above conditions.
- That, this CTO supersedes the CTO granted earlier vide ref. no. JSPCB/HO/RNC/CTO-82642/2016/192, dated 08.07.2016.
 - (B) General Conditions:
 - (1) That, the occupier shall maintain the National Ambient Air Quality Standard given below:

			Concentration	in Ambient Air
Time Weighted Average (1) (2) (3) 1. Sulphur Dioxide (SO2), µg/m3 2. Nitrogen Dioxide (NO2), µg/m3 3. Particulate Matter (size less than 10 µm) or PM10, µg/m3 4. Particulate Matter (size less than 2.5 µm) or PM2.5, µg/m3 5. Ozone(O3), µg/m3 6. Lead (Pb) µg/m3 Annual 24 hours 7. Carbon Monoxide (CO) mg/m3 Annual 24 hours 7. Carbon Monoxide (CO) mg/m3 Annual 24 hours 9. Benzene (C6H6) Annual	Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Govt.)		
(1)	(2)	(3)	(4)	(5)
1.	Sulphur Dioxide (SO2), µg/m3		50 80	20 80
2.		Committee of the Commit	40 80	30 80
3.	(size less than 10 µm) or PM10,		60 100	60 100
4.	(size less than 2.5 μm) or PM2.5,		40 60	40 60
5.			100 180	100 180
6.	Lead (Pb) μg/m3		0.50 1.0	0.50 1.0
7.			02 04	02 04
8.			100 400	100 400
9.	Benzene (C6H6) μg/m3	Annual	05	05
10.	Benzo(a) Pyrene(BaP) Particulate Phase only ng/m3	Annual	01	01
11.	Arsenic (As) ng/m3	Annual	06	06
12.	Nickel (Ni) ng/m3	Annual	20	20

Note: Serial no. 1 to 4-M and atory Serial no. 5 to 12 As applicable for specific type of industry.

(2) That, the occupier shall maintain the emission quality within the standard and the quantity, as follows:

S N	Parameter	Standard	
1	Particulate Matter	150 mg/Nm3	

(3) That, the occupier shall keep process effluent in close-circuit and the quality of effluent from other sources in conformity with the standard (s) and the discharge quantity as below:

SN	Parameter	Standard
1	Total Suspended Solids	100 mg/L
2	BOD	30 mg/L
3	COD	250 mg/L
4	Oil & Grease	10 mg/L

(4) That, the occupier shall dispose of solid wastes as follows:

SN	Waste Type	Mode of Disposal
1	Hazardous Carbonaceous Wastes	In co-processing in high temperature furnaces or kiln
2	Hazardous Non-Carbonaceous Wastes	In TSDF
3	Non-Carbonaceous Non- Hazardous solid wastes/ Mine Over Burden	As a substitute of Soil or Mineral

- (5) That, the occupier shall keep D G Set(s) within acoustic enclosure and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm.
- (6) That, the occupier shall install and maintain Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge and submit the photographic view of the structures within a month.
- (7) That, the occupier shall grow and maintain greenery of the project in the periphery and other available spaces and shall continue enhancing its plant density and biodiversity.
- (8) That, the occupier shall submit environmental statement with supporting stoichiometric calculations analyses reports, every year latest by 30th September of the next financial year.
- (9) That, the occupier shall submit report(s) duly monitored and issued by an NABL accredited / ISO 9001:2008 and OHSAS 18001:2007 certified laboratory in compliance sub-para (2), (3), (4) and (5) of paragraph 3 of this CTO yearly at required periodicity.

- (10) That, this CTO is valid subjected to the validity of mining Lease/Mining Plan/Ecofriendly/Environmental Clearance, if applicable. In case of no renewal of Mining Lease/Mining Plan, this consent shall be treated as revoked automatically.
- (11) That, this CTO is issued from the environmental angle only and does not absolve the occupier from other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with these conditions laid down in all other laws for the timebeing in force, rests with the industry/ unit/ occupier.
- (12) That, this CTO shall not in any way, adversely affect or jeopardize the legal proceeding, if any, instituted in the past or that could be, instituted against you by the State Board for violation of the provisions of the Act or the Rules made there under.
- (13) That, the occupier shall comply with all applicable provisions of the Water (Prevention & Control of Pollution) Act, 1974; the Water (Prevention & Control of Pollution) Cess Act, 1977; the Air (Prevention & Control of Pollution) Act, 1981; and the Environment (Protection) Act, 1986 and Rules made there under.
- 4. That, this CTO shall not absolve the occupier from making compliance of other statutory prescribed under any law or direction of courts or any other instrument for the time being in force.
- 5. That, this CTO is being issued on the basis of information/documents/ certificate submitted by the unit. This CTO will be revoked if any of the information/documents/certificates/undertaking given by the occupier is found false/fictitious/forged in future.
- 6. The Order shall be valid subject to compliance of all other legal requirements applicable to the unit.
- 7. The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alteration in conditions of this consent.

This is issued with the approval of the Competent authority

RAJEEV
LOCHAN
BAKSHI
Date: 2020.12.30
13:45:40 +05'30'

[Rajeev Lochan Bakshi]

Member Secretary

Dated: 2020-12-30

Memo No.: JSPCB/HO/RNC/CTO-8604352/2020/1993

Copy to: M/s West Bokaro Colliery, TATA Steel Ltd., General Manager, West Bokaro Colliery, West Bokaro Division, TATA Steel Ltd. PO:Ghatotand, Dist: Ramgarh/ Director of Industry, Government of Jharkhand, Ranchi/ Deputy Commissioner, Ramgarh/ Director of Mines, Government of Jharkhand, Ranchi/ Chief Inspector of Factories, Ranchi/ DFO, Ramgarh/ R O, Hazaribagh/ DMO, Ramgarh for information & ensuring compliance of the above.

Digitally signed by RAJEEV LOCHAN BAKSHI Date: 2020.12.30 13:46:10 +05'30'

[Rajeev Lochan Bakshi] Member Secretary

JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004 Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Dated: 2022-12-25

Ref No. JSPCB/HO/RNC/CTO-13007848/2022/1795

Consent to operate (CTO) under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

 Application (s) dated 2022-04-15 of 20 MW Captive Power House & 5MW DG set of West Bokaro Division, TATA Steel Ltd., Occupier Name: Anurag Dixit for consent under section 25 (1)(b)/25 (1) (c)/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(1) of the Air (Prevention & Control of Pollution) Act, 1981..

2. Documents Relied Upon:

- (a) The content of Consent-to-Establish (CTE), vide Ref. No. T-1409, dated. 21.03.1996.
- (b) The content of Consent to Operate (CTO), vide ref. no. JSPCB/HO/RNC/CTO-8697995/2020/2017, dated 31.12.2020.
- (c) The content of Environmental Clearance (EC), vide ref. no. J-11015/108/2006-IA.II(M), dated 17.05.2007. granted for the coal mining project.
- (d) The content of affidavit regarding "No Expansion".
- (e) The content of Inspection Report (IR), vide ref. no. 603, dated 21.06.2022.
- (f) The content of statement made in reply of show-cause that necessary amendment will be made in the EC regarding addition of power plant with capacity.
- (g) The content of letter regarding "Grant of Permission for utilization of Fly ash of Power House unit in captive mines of West Bokaro Division, Tata Steel Limited".
- (h) The content of authorization under HoWM Rules, 2016.
- (i) The content of self certificate regarding procurement of raw material from valid sources.
- (j) The content of affidavit stating that "No Expansion" has been made.
- 3. The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to operate the project in Mauza -Duni, Barughutu, P S -Ghatotand, District -RAMGARH, as follows:

Project	Site-Area		Investment (Rs)	Product & Capacity	Period of CTO
	Plot Nos.	Area			Date of issue To

Before As per land schedule	As per land schedule	Rs 72,42,18,84 0/- (as per self certificate)	Captive Power - 2X10 MW [As per NOC and previous CTO]	31/12/2027	
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(A) Specific Conditions:

- That, the occupier shall operate and maintain online monitoring system for ambient air quality and stack emission and effluent quality with connectivity to Jharkhand State Pollution control Board server.
- That, the occupier shall establish well equipped environmental laboratory with facilities to monitor at least all regularity parameters and duly accredited by NABL.
- 3. That, the occupier shall submit the monthly report on compliance of CREP responsibility to the Board.
- 4. That, the occupier shall if be found violating the Consent to Operate at any point of time during inspection of the plant by the competent authority, the Consent to Operate shall be revoked as per provision of the acts.
- 5. That, the occupier shall maintain online effluent and stack monitoring system with transmission of monitored data to CPCB and JSPC Board Server, failing which Consent to Operate order shall be revoked.
- 6. That, the occupier shall submit annual implementation report (for the period 1st April to 31st March) providing information about the compliance of provision in the notification by the 30th day of April, every year to SPCB, CPCB and the Concerned Regional Office of MOEF.
- 7. That, the occupier shall submit monthly report of evacuation of Ash pond to the Board and transport vehicle carrying Fly Ash must be fully covered and in no case there should be any spillage of Fly Ash.
- 8. That, the occupier shall obtain Authorization under Hazardous Wastes Management Rules, 2016 and dispose of all Hazardous Waste as per the Rules.
- 9. That, the occupier shall abide by the guidelines/rules/conditions as granted by the Board.
- 10. That, the occupier shall submit compliance of CTO conditions every year before 120 days of the expiry date of this CTO alongwith the recent analysis reports to the Board successively.
- 11. That, the occupier shall operate and maintain the ETP and STP and submit the report to the Board on quarterly basis.

- That, the occupier shall operate and maintain the CAAQMS on regular basis and ensure data transmission to the Board.
- 13. That, the occupier shall submit applications for renewal of consent under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days prior to the date of expiry of this consent with documents showing compliance of all of the above condition.
- That, this CTO supersedes the CTO granted earlier vide ref. no. JSPCB/HO/RNC/CTO-8697995/2020/2017, dated 31.12.2020.
- 15. That, the occupier shall abide by the provisions and rules made by MoEF and CC, New Delhi for carrying out the transportation work of fly ash to the proposed disposal place.
- 16. That, the occupier shall allow transportation of fly ash through covered dumpers/trucks
- 17. That the occupier shall maintain the register for dispatch of the fly ash and shall submit the same to the Board on quarterly basis.
- 18. That the occupier shall comply with the conditions of the "Grant of permission for utilization of Fly ash of power house unit in captive mines of West Bokaro Divison, Tata Steel Limited vide Board's Ref No. B-2026 dated 23/09/2022.

(B) General Conditions:

(1) That, the occupier shall maintain the National Ambient Air Quality Standard given below:

			Concentration	in Ambient Air
N	Pollutant	Time Weighted Average	Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Govt.)
(1)	(2)	(3)	(4)	(5)
1.	Sulphur Dioxide (SO2), µg/m3	Annual 24 hours	50 80	20 80
2.	Nitrogen Dioxide (NO2), μg/m3	Annual 24 hours	40 80	30 80
3.	Particulate Matter (size less than 10 µm) or PM10, µg/m3	Annual 24 hours	60 100	60 100
4.	Particulate Matter (size less than 2.5 µm) or PM2.5, µg/m3	Annual 24 hours	40 60	40 60
5.	Ozone(O3), µg/m3	8 hours 1 hour	100 180	100 180
6.	Lead (Pb) μg/m3	Annual 24 hours	0.50 1.0	0.50 1.0
7.	Carbon Monoxide (CO) mg/m3	8 hours 1 hour	02 04	02 04
8.	Ammonia (NH3) μg/m3	Annual 24 hours	100 400	100 400
9.	Benzene (C6H6) μg/m3	Annual	05	05
10.	Benzo(a) Pyrene(BaP) Particulate Phase only ng/m3	Annual	01	01
11.	Arsenic (As) ng/m3	Annual	06	06
12.	Nickel (Ni) ng/m3	Annual	20	20

Note: Serial no. 1 to 4-M and atory Serial no. 5 to 12 As applicable for specific type of industry.

(2) That, the occupier shall maintain the emission quality within the standard and the quantity, as follows:

S N	Parameter	Standard	
1	Particulate Matter	150 mg//Nm3	

(3) That, the occupier shall keep process effluent in close-circuit and the quality of effluent from other sources in conformity with the standard (s) and the discharge quantity as below:

SN	Parameter	Standard	
1	Total Suspended Solids	100 mg/L	
2	BOD	30 mg/L	
3	COD	250 mg/L	
4	Oil & Grease	10 mg/L	

(4) That, the occupier shall dispose of solid wastes as follows:

SN	Waste Type	Mode of Disposal
1	Hazardous Carbonaceous Wastes	In co-processing in high temperature furnaces or kilns
2	Hazardous Non-Carbonaceous Wastes	In TSDF
3	Non-Carbonaceous Non- Hazardous solid wastes/ Mine Over Burden	As a substitute of Soil or Mineral

- (5) That, the occupier shall keep D G Set(s) within acoustic enclosure and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm.
- (6) That, the occupier shall install and maintain Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge and submit the photographic view of the structures within a month.
- (7) That, the occupier shall grow and maintain greenery of the project in the periphery and other available spaces and shall continue enhancing its plant density and biodiversity.
- (8) That, the occupier shall submit environmental statement with supporting stoichiometric calculations analyses reports, every year latest by 30th September of the next financial year.
- (9) That, the occupier shall submit report(s) duly monitored and issued by an NABL accredited / ISO 9001:2008 and OHSAS 18001:2007 certified laboratory in compliance sub-para (2), (3), (4) and (5) of paragraph 3 of this CTO yearly at required periodicity.

- (10) That, this CTO is valid subjected to the validity of mining Lease/Mining Plan/Ecofriendly/Environmental Clearance, if applicable. In case of no renewal of Mining Lease/Mining Plan, this consent shall be treated as revoked automatically.
- (11) That, this CTO is issued from the environmental angle only and does not absolve the occupier from other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with these conditions laid down in all other laws for the timebeing in force, rests with the industry/ unit/ occupier.
- (12) That, this CTO shall not in any way, adversely affect or jeopardize the legal proceeding, if any, instituted in the past or that could be, instituted against you by the State Board for violation of the provisions of the Act or the Rules made there under.
- (13) That, the occupier shall comply with all applicable provisions of the Water (Prevention & Control of Pollution) Act, 1974; the Water (Prevention & Control of Pollution) Cess Act, 1977; the Air (Prevention & Control of Pollution) Act, 1981; and the Environment (Protection) Act, 1986 and Rules made there under.
- 4. That, this CTO shall not absolve the occupier from making compliance of other statutory prescribed under any law or direction of courts or any other instrument for the time being in force.
- 5. That, this CTO is being issued on the basis of information/documents/ certificate submitted by the unit. This CTO will be revoked if any of the information/documents/certificates/undertaking given by the occupier is found false/fictitious/forged in future.
- 6. The Order shall be valid subject to compliance of all other legal requirements applicable to the unit.
- The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alteration in conditions of this consent.

This is issued with the approval of the Competent authority

Yatindra Das Date: 2022.12.25
Numar Das Date: 2022.12.25

[Y. K. Das] Member Secretary

Dated: 2022-12-25

Memo No.: JSPCB/HO/RNC/CTO-

13007848/2022/1795

Copy to: 20 MW Captive Power House & 5MW DG set of West Bokaro Division, TATA Steel Ltd., At-TATA Steel Ltd. West Bokaro Division, PO:Ghatotand, Dist: Ramgarh, Jharkhand/ Director of Industries, Government of Jharkhand, Ranchi/ Chief Inspector of Factories, Ranchi/ Deputy Commissioner, Ramgarh/ DFO, Ramgarh/ RO, Hazaribagh for information & ensuring compliance of the above.

Yatindra Digitally signed by Yatindra Kumar Das Date: 2022,12.2 Member Secretary

Kumar Das Date: 2022,12.2 Member Secretary

JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004 Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Dated: 2020-12-31

Ref No. JSPCB/HO/RNC/CTO-8651655/2020/2018

Consent to operate (CTO) under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

 Application (s) dated 2020-08-23 of Washery-II, West Bokaro Division, TATA Steel Ltd., Occupier Name :Manish Mishra for consent under section 25 (1)(b)/25 (1) (c)/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(1) of the Air (Prevention & Control of Pollution) Act, 1981..

2. Documents Relied Upon:

- (a) The content of Environmental Clearance (EC), vide Ref. No. J-11015/108/2006.I(A).II(M), dated 17.05.2007.
- (b) The content of Consent-to-Establish (CTE), vide Ref. No.4554, dated 25.08.2008.
- (c) The content of Consent-to-Operate (CTO), vide Ref. No. JSPCB/HO/RNC/CTO-494689/2016/71, dated 01.06.2016.
- (d) The content of Inspection Report (IR), vide Ref. No. 1114, dated. 23.11.2020.
- 3. The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to operate the project in Mauza -Duni, Barughuttu etc., P S -Ghatotand, District -RAMGARH, as follows:

Project	Site-Area		Investment (Rs)	Product & Capacity	Period of CTO
	Plot Nos.	Area			Date of issue To
Before Expansion	383, 387, 388, Khata No 48 (as per previous CTO)	70.43 Acre (as per previous CTO)	88.81 Crore (as per application)	Washed Coal - 7300 MT/Day (as per previous CTO)	31/12/2025

(A) Specific Conditions:

 That, the occupier shall operate crushers at CHP with high efficiency bag filters, water sprinkling system to check fugitive emission.

- That, the occupier shall inform to Regional Office-Cum- Lab, Hazaribagh and Head Office, JSPC Board, at Ranchi within 24 hrs from the time of closure or opening of the plant.
- That, the occupier shall install, operate and maintain the ETP for workshop, coal washery & CHP waste water.
- 4. That, the occupier shall maintain zero effluent discharge in the plant.
- That, the occupier shall if be found violating the Consent to Operate at any point of time during inspection of the plant by the competent authority, the Consent to Operate shall be revoked as per provision of the acts.
- 6. That, the vehicle movement in the coal washery area shall be regulated effectively to avoid traffic congestion. High pressure horn shall be prohibited. Smokes emission from heavy duty vehicle operation in the coal washeries should conform the standards prescribed under the Motor Vehicle Rules, 1989.
- That, the water sprinkling by using fine atomizer nozzles arrangement shall be provided on the coal heaps arid on around the crushers/pulverisers.
- 8. That, the occupier shall make arrangement to control fugitive emission caused due to transportation of coal.
- 9. That, the occupier shall do cleaning and wetting of the ground by installing fixed type water sprinklers.
- 10. That, the occupier shall construct garland drain all along the reject coal dumped/tailings followed by pond and shall do its evacuation and maintain properly.
- 11. That, the ambient air quality standards in respect of noise as notified under the Environmental (Protection) Rules, 1986, shall be followed at the boundary line of the coal washery.
- 12. That, the water or water mixed chemical shall be sprayed at all strategic coal transfer points such as conveyors, loading, unloading points, etc. As far as practically possible conveyors, transfer points, etc, shall be provided with enclosures.
- 13. That, the crushers/pulverisers of the coal washeries shall be provided with enclosures, fitted with suitable air pollution control measures and finally emitted through a stack of minimum height of 30 m, conforming particulate matter emission standard of 150 mg/N cubic meter or provided with adequate water sprinkling arrangement.
- 14. That, the efficiency of the settling ponds of the waste water treatment system of the coal washery shall not be less than 90 per cent.
- 15. That, the occupier shall submit applications for renewal of consent under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 again 120 days prior to the date of expiry of this consent with documents showing compliance of all of the above conditions.

- 16. That, the green belt be developed along the road side, coal, handling plants, residential complex, office building and all around the boundary line of the coal washery.
- 17. That, the storage bunkers, hoppers, rubber decks in chutes and centrifugal chutes shall be provided with proper rubber linings.
- 18. That, the occupier shall install online certified PM10 analyzer with onsite display and connectivity to JSPCB server within 2 months from the date of issue of this CTO, failing which CTO may be revoked and environmental compensation will be levied.
- 19. That, the occupier shall install CAAQMS within 2 months failing which this CTO may be revoked and environmental compensation may be levied.
- 20. That, this CTO is valid subject to any direction/guideline released by MOEF & CC or any other concerned body regarding washeries.
- 21. That, the occupier shall assure compliance of code of conduct for washery units and submit the report with evidentary proof.
- 22. That, the occupier shall submit compliance of this CTO every year alongwith recent analysis reports every year to the Board successively.
- That, this CTO supersedes the CTO granted earlier vide ref. no. JSPCB/HO/RNC/CTO-494689/2016/71, dated 01.06.2016.

(B) General Conditions:

(1) That, the occupier shall maintain the National Ambient Air Quality Standard given below:

			Concentration	in Ambient Air
N	Pollutant	Time Weighted Average	Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Govt.)
(1)	(2)	(3)	(4)	(5)
1.	Sulphur Dioxide (SO2), µg/m3	Annual 24 hours	50 80	20 80
2.	Nitrogen Dioxide (NO2), μg/m3	Annual 24 hours	40 80	30 80
3.	Particulate Matter (size less than 10 µm) or PM10, µg/m3	Annual 24 hours	60 100	60 100
4.	Particulate Matter (size less than 2.5 µm) or PM2.5, µg/m3	Annual 24 hours	40 60	40 60
5.	Ozone(O3), µg/m3	8 hours 1 hour	100 180	100 180
6.	Lead (Pb) μg/m3	Annual 24 hours	0.50 1.0	0.50 1.0
7.	Carbon Monoxide (CO) mg/m3	8 hours 1 hour	02 04	02 04
8.	Ammonia (NH3) μg/m3	Annual 24 hours	100 400	100 400
9.	Benzene (C6H6) μg/m3	Annual	05	05
10.	Benzo(a) Pyrene(BaP) Particulate Phase only ng/m3	Annual	01	01
11.	Arsenic (As) ng/m3	Annual	06	06
12.	Nickel (Ni) ng/m3	Annual	20	20

Note: Serial no. 1 to 4-M and atory Serial no. 5 to 12 As applicable for specific type of industry.

(2) That, the occupier shall maintain the emission quality within the standard and the quantity, as follows:

S N	Parameter	Standard	
1	Particulate Matter	150 mg/Nm3	

(3) That, the occupier shall keep process effluent in close-circuit and the quality of effluent from other sources in conformity with the standard (s) and the discharge quantity as below:

SN	Parameter	Standard	
1	Total Suspended Solids	100 mg/L	
2	BOD	30 mg/L	
3	COD	250 mg/L	
4	Oil & Grease	10 mg/L	

(4) That, the occupier shall dispose of solid wastes as follows:

SN	Waste Type	Mode of Disposal
1	Hazardous Carbonaceous Wastes	In co-processing in high temperature furnaces or kilns
2	Hazardous Non-Carbonaceous Wastes	In TSDF
3	Non-Carbonaceous Non- Hazardous solid wastes/ Mine Over Burden	As a substitute of Soil or Mineral

- (5) That, the occupier shall keep D G Set(s) within acoustic enclosure and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm.
- (6) That, the occupier shall install and maintain Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge and submit the photographic view of the structures within a month.
- (7) That, the occupier shall grow and maintain greenery of the project in the periphery and other available spaces and shall continue enhancing its plant density and biodiversity.
- (8) That, the occupier shall submit environmental statement with supporting stoichiometric calculations analyses reports, every year latest by 30th September of the next financial year.
- (9) That, the occupier shall submit report(s) duly monitored and issued by an NABL accredited / ISO 9001:2008 and OHSAS 18001:2007 certified laboratory in compliance sub-para (2), (3), (4) and (5) of paragraph 3 of this CTO yearly at required periodicity.

- (10)That, this CTO is valid subjected to the validity of mining Lease/Mining Plan/Ecofriendly/Environmental Clearance, if applicable. In case of no renewal of Mining Lease/Mining Plan, this consent shall be treated as revoked automatically.
- (11)That, this CTO is issued from the environmental angle only and does not absolve the occupier from other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with these conditions laid down in all other laws for the timebeing in force, rests with the industry/ unit/ occupier.
- That, this CTO shall not in any way, adversely affect or jeopardize the legal proceeding, if any, (12)instituted in the past or that could be, instituted against you by the State Board for violation of the provisions of the Act or the Rules made there under.
- That, the occupier shall comply with all applicable provisions of the Water (Prevention & Control of (13)Pollution) Act, 1974; the Water (Prevention & Control of Pollution) Cess Act, 1977; the Air (Prevention & Control of Pollution) Act, 1981; and the Environment (Protection) Act, 1986 and Rules made there under.
- That, this CTO shall not absolve the occupier from making compliance of other statutory prescribed 4. under any law or direction of courts or any other instrument for the time being in force.
- 5. That, this CTO is being issued on the basis of information/ documents/ certificate submitted by the unit. This CTO will be revoked if any of the information/documents/certificates/undertaking given by the occupier is found false/fictitious/forged in future.
- The Order shall be valid subject to compliance of all other legal requirements applicable to the unit. 6.
- 7. The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alteration in conditions of this consent.

This is issued with the approval of the Competent authority

Digitally signed by RAJEEV RAJEEV LOCHAN LOCHAN BAKSHI Date: 2020.12.31 BAKSHI 15:29:20 +05'30'

[Rajeev Lochan Bakshi] Member Secretary

Dated: 2020-12-31

Memo No.: JSPCB/HO/RNC/CTO-

8651655/2020/2018

M/s Washery-II, West Bokaro Division, TATA Steel Ltd., At-Head (W-II), West Bokaro Copy to: Division, TATA Steel Ltd. PO: Ghatotand, Dist: Ramgarh, Jharkhand/ Director of Industries, Government of Jharkhand, Ranchi/ Director of Mines, Government of Jharkhand, Ranchi/ Chief Inspector of Factories, Ranchi/ Deputy Commissioner, Ramgarh/ DFO, Ramgarh/ DMO, Ramgarh/ Regional Officer, RO, Hazaribagh for information & ensuring compliance of the above.

> RAJEEV LOCHAN BAKSHI

RAJEEV LOCHAN BAKSHI Date: 2020.12.31 15:30:01 +05'30'

Digitally signed by [Rajeev Lochan Bakshi] Member Secretary

JHARKHAND STATE POLLUTION CONTROL BOARD

TOWNSHIP ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004 Telephone: 0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Dated: 2021-06-28

Ref No. JSPCB/HO/RNC/CTO-9991396/2021/835

Consent to operate (CTO) under section 25 /26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

 Application (s) dated 2021-02-10 of Washery-III, TATA Steel Ltd., West Bokaro Division, Occupier Name: Manish Mishra for consent under section 25 (1)(b)/25 (1) (c)/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21(1) of the Air (Prevention & Control of Pollution) Act, 1981...

2. Documents Relied Upon:

- (a) The content of Environmental Clearance (EC), vide Ref. No. J- 11015/108/2006-I(A). II(M), dated. 17.05.2007.
- (b) The content of Consent-to-Establish(CTE), Ref. No.-N-88 dated 05.05.2006.
- (c) The content of Consent-to Operate(CTO), Ref. No.-JSPCB/HO/RNC/CTO-653867/2016/163 dated 01.07.2016.
- (d) The content of Inspection Report (I/R), Ref No 563, Dated 17.05.2021, R.O cum Lab., Hazaribagh.
- 3. The consent is granted under section 25 / 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 to operate the project in Mauza -Duni, Parsabeda, P S -Ghatotand, District -RAMGARH, as follows:

Project	Site-Area	Site-Area		Product & Capacity	Period of CTO
	Plot Nos.	Area			Date of issue To
Before Expansion	540, 541 Khata No.:01, 13	3.5 Ha	241.65 Crore	Raw coal- 15000 TPD (As per NOC)/ 4.5 MTPA (As per EC)	30/06/2026

(A) Specific Conditions:

The occupier shall established and operate well equipped environment laboratory with Env. Laboratory
has been facilities to monitor at least all regulatory parameters and duly accredited by NABL.

- That, the occupier shall construct catch drain, siltation pond retaining wall of appropriate size to arrest silt
- & sediment flows from soil, OB dump and mineral dump.
- That, the occupier shall operate crushers at CHP with high efficiency bag filters, water sprinkling system to check fugitive emission.
- 4. That, the occupier shall inform to Regional Office-Cum- Lab, Hazaribagh and Head Office, JSPC Board, at Ranchi within 24 hrs from the time of closure or opening of the plant.
- 5. That, the occupier shall if be found violating the Consent to Operate at any point of time during inspection of the plant by the competent authority, the Consent to Operate shall be revoked as per provision of the acts.
- 6. That, the occupier shall not exceed the production capacity beyond the capacity as mentioned in CTO.
- 7. That, this CTO is subject to any further decision/direction/order issued by MoEF in this regard.
- 8. That, the occupier shall construct and maintain catch drain, siltation pond retaining wall of appropriate size to arrest silt & sediment flows from soil, OB dump and mineral dump.
- That, the occupier shall operate crushers at CHP with high efficiency bag filters, water sprinkling system to check fugitive emission.
- 10. That, the occupier shall comply all the conditions of EC and CTO and submit its report to the Board on six monthly alongwith the recent analysis reports.
- 11. That, the occupier shall install, operate & maintain ETP with workshop of heavy vehicles.
- 12. That, the occupier shall construct toe wall and garland drain around the OB dump.
- 13. That, the occupier shall install, operate and maintain the systems for online monitoring of ambient air quality and continuous mine water discharge quality with connectivity to Jharkhand State Pollution Control Board and CPCB server.
- 14. That, the occupier shall install, operate and maintain facilities to dispose of carbonaceous hazardous and non-hazardous solid wastes for co-processing in high temperature kilns/ furnaces and shall dispose of noncarbonaceous hazardous wastes to TSDF and shall use non-carbonaceous non-hazardous solid wastes or mine overburden as a substitute of live soil or as a land fill as and where applicable.
- 15. That, the occupier shall make arrangement of transportation of ROM to the railway siding or coal washery by pneumatic conveyer fully covered all along its way
- 16. That, the occupier shall shift/keep OB dump(s) to grey land and at least 100 mtr away from river / stream/ water body.

- 17. That, the occupier shall ensure washing of wheels of the vehicles used for transportation of coal to mitigate fugitive emission.
- 18. That, the occupier shall ensure installation, operationalization and maintenance of CAAQMS and PM 10 analyzer failing which CTO may be revoked and environmental compensation may be levied as per the norms.
- 19. That, the occupier shall submit application for renewal of consent under section 25/26 of the Water (prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (prevention & Control of Pollution) Act, 1981 again 120 days prior to the date of expiry of this consent with requisite fee and documents showing compliance of all of the above condition.
- That, this CTO supersedes the CTO granted earlier vide ref. no. JSPCB/HO/RNC/CTO-653867/2016/163, dated 01.07.2016.
- 21. The occupier shall dispose of solid waste/tailings generated from the unit properly and shall submit the slurry generation and disposal data Quarterly to the Board.
- 22. The occupier shall maintain zero discharge from the premises.
- 23. The occupier shall ensure that all the raw coal and washed coal should be transported Being Complied, Pipe conveyor through covered truck/wagon.
- 24. That, the occupier shall regular cleaning & wetting of the ground and shall maintain good House keeping.
- 25. That, the occupier shall install fixed type of Water sprinklers in the raw coal handling area as well other dust prone areas;
- 26. That, the occupier shall make all the roads pucca inside the Coal Washery area, where the vehicles ply regularly and also make arrangements for proper water sprinkling on such roads.

(B) General Conditions:

(1) That, the occupier shall maintain the National Ambient Air Quality Standard given below:

			Concentration	in Ambient Air
N	Pollutant	Time Weighted Average	Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Govt.)
(1)	(2)	(3)	(4)	(5)
1.	Sulphur Dioxide (SO2), µg/m3	Annual 24 hours	50 80	20 80
2.	Nitrogen Dioxide (NO2), μg/m3	Annual 24 hours	40 80	30 80
3.	Particulate Matter (size less than 10 µm) or PM10, µg/m3	Annual 24 hours	60 100	60 100
4.	Particulate Matter (size less than 2.5 µm) or PM2.5, µg/m3	Annual 24 hours	40 60	40 60
5.	Ozone(O3), µg/m3	8 hours 1 hour	100 180	100 180
6.	Lead (Pb) μg/m3	Annual 24 hours	0.50 1.0	0.50 1.0
7.	Carbon Monoxide (CO) mg/m3	8 hours 1 hour	02 04	02 04
8.	Ammonia (NH3) μg/m3	Annual 24 hours	100 400	100 400
9.	Benzene (C6H6) μg/m3	Annual	05	05
10.	Benzo(a) Pyrene(BaP) Particulate Phase only ng/m3	Annual	01	01
11.	Arsenic (As) ng/m3	Annual	06	06
12.	Nickel (Ni) ng/m3	Annual	20	20

Note: Serial no. 1 to 4-M and atory Serial no. 5 to 12 As applicable for specific type of industry.

(2) That, the occupier shall maintain the emission quality within the standard and the quantity, as follows:

S N	Parameter	Standard	
1	Particulate Matter	150 mg/Nm3	

(3) That, the occupier shall keep process effluent in close-circuit and the quality of effluent from other sources in conformity with the standard (s) and the discharge quantity as below:

SN	Parameter	Standard	
1	Total Suspended Solids	100 mg/L	
2	BOD	30 mg/L	
3	COD	250 mg/L	
4	Oil & Grease	10 mg/L	

(4) That, the occupier shall dispose of solid wastes as follows:

SN	Waste Type	Mode of Disposal
1	Hazardous Carbonaceous Wastes	In co-processing in high temperature furnaces or kilns
2	Hazardous Non-Carbonaceous Wastes	In TSDF
3	Non-Carbonaceous Non- Hazardous solid wastes/ Mine Over Burden	As a substitute of Soil or Mineral

- (5) That, the occupier shall keep D G Set(s) within acoustic enclosure and shall keep the height(s) of exhaust pipe(s) as per Central Pollution Control Board norm.
- (6) That, the occupier shall install and maintain Central Ground Water Board/ State Ground Water Directorate approved system of rain water harvesting-cum-ground water recharge and submit the photographic view of the structures within a month.
- (7) That, the occupier shall grow and maintain greenery of the project in the periphery and other available spaces and shall continue enhancing its plant density and biodiversity.
- (8) That, the occupier shall submit environmental statement with supporting stoichiometric calculations analyses reports, every year latest by 30th September of the next financial year.
- (9) That, the occupier shall submit report(s) duly monitored and issued by an NABL accredited / ISO 9001:2008 and OHSAS 18001:2007 certified laboratory in compliance sub-para (2), (3), (4) and (5) of paragraph 3 of this CTO yearly at required periodicity.

- (10) That, this CTO is valid subjected to the validity of mining Lease/Mining Plan/Ecofriendly/Environmental Clearance, if applicable. In case of no renewal of Mining Lease/Mining Plan, this consent shall be treated as revoked automatically.
- (11) That, this CTO is issued from the environmental angle only and does not absolve the occupier from other statutory obligations prescribed under any other law or any other instrument in force. The sole and complete responsibility to comply with these conditions laid down in all other laws for the timebeing in force, rests with the industry/ unit/ occupier.
- (12) That, this CTO shall not in any way, adversely affect or jeopardize the legal proceeding, if any, instituted in the past or that could be, instituted against you by the State Board for violation of the provisions of the Act or the Rules made there under.
- (13) That, the occupier shall comply with all applicable provisions of the Water (Prevention & Control of Pollution) Act, 1974; the Water (Prevention & Control of Pollution) Cess Act, 1977; the Air (Prevention & Control of Pollution) Act, 1981; and the Environment (Protection) Act, 1986 and Rules made there under.
- 4. That, this CTO shall not absolve the occupier from making compliance of other statutory prescribed under any law or direction of courts or any other instrument for the time being in force.
- 5. That, this CTO is being issued on the basis of information/documents/ certificate submitted by the unit. This CTO will be revoked if any of the information/documents/certificates/undertaking given by the occupier is found false/fictitious/forged in future.
- 6. The Order shall be valid subject to compliance of all other legal requirements applicable to the unit.
- 7. The State Board reserve the right to revoke, withdraw or make any reasonable variation / change / alteration in conditions of this consent.

This is issued with the approval of the Competent authority

Rajeev
Lochan
Bakshi
Date: 2021.06.28
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Rajeev Lochan Bakshi

Dated: 2021-06-28

Member Secretary

Memo No.: JSPCB/HO/RNC/CTO-

9991396/2021/835

Copy to: M/s Washry-III, TATA Steel Ltd., West Bokaro Division, Chief (CB), TATA Steel Ltd., West Bokaro Division, PO:Ghatotand, Dist: Ramgarh/ Director of Industry, Government of Jharkhand, Ranchi/ Director of Mines, Government of Jharkhand, Ranchi/ Chief Inspector of Factories, Ranchi/ Deputy Commissioner, Ramgarh/ DFO, Ramgarh/ DMO, Ramgarh/ R O, Hazaribag for information & ensuring compliance of the above.

Rajeev
Lochan
Bakshi
Date: 2021.06.28
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Rajeev Lochan Bakshi Member Secretary



JHARKHAND STATE POLLUTION CONTROL BOARD

T.A. BUILDING, HEC COMPLEX, P.O.: DHURWA, DIST.: RANCHI

Ref. No. N-565

Date:- 12.0)

No Objection Certificate under section 25 & 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981.

Reference application no. 4221, dated 26.07.2005 of M/s. West Bokaro Divisions. Tata Steel, At+Po-Ghatotand, Distt.: Hazaribagh for expanding the existing capacity of Coal Mines at Mouza-Barughutu, Banji, Parej, Durukasmar, Pundi, Duni, Parsabera and Kedla, Po-Ghatotand, Distt. Hazaribagh. The production capacity of the mines shall be as follows:

Coal Production (i) Prsent Capacity - 4.7 MTPA
(ii) Capacity after expansion - 7.0 MTPA
(iii) Mining Area - 1740 Ha
(iv) Type of Mines - Open Cast

2. After considering:

- i) The facts stated in the N.O.C application & Project Report;
- Provisions of Water (Prev.& Control of Pollution) Act, 1974 & Air (Prev.& Control of Pollution) Act, 1981 and Environmental Protection Act, 1986.
- iii) Rapid EIA and EMP Submitted.
- iv) Public Hearing conducted on 18.10.05
- 3. N.O.C. in favour of unit, based on site inspection and facts stated in the project report, N.O.C. application is hereby accorded subject to the following conditions: -
- The unit shall obtain consent to operate under section 25 and 26 of the Water (Prev.& Control of Pollution) Act, 1974 and section 21 of Air (Prev.& Control of Pollution) Act, 1981 prior to commissioning of the plant from State Pollution Control Board.
- ii) The unit shall install Effluent Treatment Plant adopting appropriate technology to treat the effluent to the standard stipuleted.
- iii) All tanks used for collection and treatment of effluent shall be made impervious by providing adequate cement concrete/ stone masonry/stone slab lining with leak -proof materials.
- iv) The unit shall install water meter to measure the water consumed for different purposes as per the water (Prevention & Control of Pollution) Cess Act, 1977.
- The unit shall insure continuous and uninterrupted power supply so that the pollution control system function uninterruptedly.
- vi) The unit shall upgrade pollution control systems as and when new technologies are available.
- vii) The unit shall install suitable Air Pollution Control devices such as water sprinker to control fugitive emision.
- viii) The unit shall provide Ambient Air Quality Report & Noise level monitoring report after commissioning of the plant. The unit shall ensure that the Noise level and AAQ shall be within the stipulated limit.

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ix) The D.G.sets shall be housed properly to minimise noise pollution in and around factory campus. The height of exhaust pipe shall be raised as per the norms of C.P.C.B.

x) The plantation shall be made as per Rapid EIA submitted. A green belt of minimum 30

mtrs. width shall be developed along the mining areas.

xi) Fly Ash shall be utilised in the reclaimation of the mines as per fly ash notification of Govt. of India dated 14 Sept, 1999 amended up to date.

- xii) Over burden shall not be dumped along the bank of river Bokaro. Precautionary measures shall be taken to check fine particles from going to the river along with the effluent.
- xiii) Coal shall be transported by covered dumpers and over loading shall be avoided.
- xiv) Regular cleaning and wetting shall be done on haul road to prevent dust particles from becoming air borne.
- Environmental Clearance from MOEF, Govenment of India shall be obtained before enhancing the production capacity.
- xvi) The unit shall reclaim the mined out area as per Rapid EIA/ EMP submitted. Progress report shall be submitted Annually.
- xvii) The unit shall construct haul roads pucca within the premises and buffer zone.
 - xviii) The unit shall make Socio-Economic Welfare in nearby villages.
 - xix) Civil construction, if any shall be carried out using fly ash bricks.
 - 4. The Jharkhand State Pollution Control Board reserves the right to revise and/or add any other conditions, if necessary, for the protection of Environment and to ensure pollution control or any.
 - 5. The present N.O.C. should not be considered as an assurance for granting consent to operate the proposed plant and is subject to compliance of all conditions as mentioned above.
- 6. This N.O.C. is valid for a period of one year from the date of issue.

(S.K. Narnoli) Member-Secretary

Copy forwarded to: M/s. West Bokaro Division, Tata Steel, At+Po- Ghatotand, Distt. Hazaribagh, (Jharkhand)/Secretary, MOEF, Govt. of India/ Secretary, Dept. of Forest & Environment, Government of Jharkhand/Secretary, Mines & Geology, Government of Jharkhand/Deputy Commissioner, Hazaribagh /Regional Officer, Regional Office, J.S.P.C.Board, Hazaribagh /Concerned Officer dealing with consents/100 to chaiman.

(S.K. Narnoli)

Member-Secretary

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विहार राज्य प्रदूपण नियंत्रण पर्षद्

Ref. No.: - 7: /409 No Objection Certificate Found Detadi-NOC u/s 25 and 26 of Water (Prevention & Control of

Pollution)Act. 1974 and u/s 21 of the Air (Prevention & Control of Pollution)Act. 1981. Reference application no.001373/dated 20.6.1992 and no.3211/95 dated 27.10.1995 of General Manager, West Bokaro Collieries, Ghatotand, District- Hazaribach (Bihar) for NOC from Pollution Angle of the proposed plant (near West Bokaro Collieries, District - Hazaribach).

A Rs.50.00 crore Project to replace 3 old biller: hr 2
new Fludised Bed Combustion boilers for their 2x10 MW Power Plan
based on 45.000 MT coal Washery Rejects and water from Bokaro
river.

Process: Thermal Cycle power generation by Fluidised Bed Combustion bailer.

AFTER CONSIDERING :

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- (i) The facts stated in their related application dt. 20.6.92
- (11) and 27.10.1995.
- (iii) State Government's NOC 1434E dated 9.9.92.
- (iv) N.O.C Committee's decision of 02.03.1994.
- 3. THE PROVISIONAL NOC IN FAVOUR OF THE PROPOSAL IS HEREBY ACCORDED SUBJECT TO :
- (1) Consent to operate under related Water Act and Air Act respectively.
- (ii) Submission of Wastes Management Scheme (including Recycling Reutilisation of all kind of Wastes) in prescribed proform within three months to State Pollution Control Board, Bihar.
- (iii) Submission of a Time Bound Ecodevelopment Scheme within six months, for development of Green Belt in all wacant spaces within plant area including in "Zone of Influence".
- (iv) The unit shall provide a porthole and platform in the stack for flue gas analysis and stack emission of particulate matter should not exceed 150 mg/Nm³.

 K.I.O...2/

*12.133

Huad Office Beltion Bhawan, 2nd Floor Lai Behagur Shastri 1-agar, Patha-800 (. . 1-1.000 Chamman 201/70, Member-Secretar, 281250 FAX 0612-281050

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बिहार राज्य प्रदूषण नियंत्रण पर्षद Bihar State Pollution Control Board

-: Page Two :-

- Pollution from related condensor, boiler how down and cooling tower must be within limit. There should be sampl! port in stack for flue gas analysis as per norms.
- Submission of a detailed scheme within six months for the construction of ash pond and utilisation of fly ash and bottom ash.
- (vii) Must have Independent environment cell with laboratory facility to manage and to monitor the impact within the Ic of Influence: In this regard an information should be give within 3 (three) month.

(viii) Ash pond embankments must have concrete bricks lining to avoid seepage.

- The Bihar State Pollution Control Board reserves the option to revise and add other condition(s) necessary for protecti of Environment in general and for pollution control in particular.
- 5. The present NOC should not be construed as an assurance for granting consent to operate and is subject to compliance of all conditions noted above.

Rks/13-03-1996. Liemo No .:- T. 1409

(M.P. Singh) Patna, Dated: -2/ 3 76

Copy forwarded to Desuty General Manager, TLCO, most what of a children, whatotone, Di trict Mazaribigh (Diber)/iterica I Officer, Hazaringh/Zonal Officer-II and System Analyst for this. mation and 'necessary action.

1.hts/-13.00.1996.

Beltron Bhowan, 2nd Floor, Lat Banadur Shastri Nagar, Patna-800 CS Frone Chairman: 281776, Member-Secretary 281250, EAX: 0612-281050

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JHARKHAND STATE POLLUTION CONTROL BOARD

T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI-834004

Phone.:2400852, 2400851, Fax:0651- 2400850; Web Site:www.jspcb.org

Ref.No	Date:
The state of the s	L-14 L

No Objection Certificate (Consent to establish) under section 25 & 26 of the water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act, 1981.

1. Reference application no. 8464 dated 01.11.2007 of M/s. West Bokaro Division, Tata Steel, P.O.-Ghatotand,-825 314, Distt.-Ramgarh for relocation of coal handling plant of Washery-II at Plot No.- 383, 387, 388, Khata No.-48, Mauza-Barughuttu, Banji, Parej, Duru Kasmar, Pundi, Duni, Parsabera, Kedla, P.O.-Ghatotand, Distt.-Ramgarh. The production capacity and proposed investment of the industry will be as follows:

Crushed Coal Transporting to Washery-II
by over land conveyor
Proposed Investment -

Rs. 3100.0 lacs

7300 T/day

2. The documents relied upon:

- (1) The contents of N.O.C application, Project report, E.M.P. and the documents furnished in support of application.
- (2) The related provisions of the Water (Prevention & Control of Pollution) Act, 1974; the Air (Prevention & Control of pollution) Act, 1981 and the Environment (Protection) Act, 1986
- (3) The entries of the check list dated 18.12.2007.
- After considering the above, N.O.C (Consent to establish) is accorded subject to the compliance of the following conditions:
- (01) That, the proponent shall install minimum resource wasting plant (s) and shall reach to no resource wasting plant (s) in 5 years by self introspection and retrofitting.
- (02) That, the proponent shall obtain consent to operate from State Pollution Control Board under section 25 and 26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of Pollution) Act,1981 prior to commissioning of the plant.
- (03) That, the proponent shall install water meter to measure the water to be consumed for different purposes to meet the requirement of the Water, furnish returns of water to be consumed and pay water-cess under the Water (Prevention & Control of Pollution) Cess Act, 1977.
- (04) That, the proponent shall obtain authorization under the Hazardous Wastes (Management & Handling) Rules, 1989; the Biomedical Wastes (Management & Handling) Rules, 1998 and the Municipal Solid Wastes (Management & Handling) Rules, 2000, whichever is applicable.

Contd.....

- (05) That, the proponent shall collect and treat the effluent in foolproof latest system and shall recycle treated effluent to the system for reuse and shall ensure the discharge of effluent (if at all necessary) in up stream of the water intake point.
- (06) That, the proponent shall make stack(s) of the height and with the provision(s) of emission monitoring port hole(s), ladder(s) and platform(s), as prescribed by Central Pollution Control Board.
- (07) That, the proponent shall submit the reports of Effluent, Emission, Ambient air quality and Noise level monitored before and after commissioning of the plant, in compliance of the standard prescribed in the Environment (Protection) Rules, 1986.
- (08) That, the proponent shall use D.G. set(s) of standard as prescribed in the Environment (Protection) Rules, 1986 and shall house it (them) in integral acoustic enclosure (s) and shall keep the height of exhaust pipe as per Central Pollution Control Board norms.
- (09) That, the proponent shall dispose of hazardous wastes, biomedical wastes, municipal solid wastes and batteries wastes (whichever is applicable) in the manner as specified under respective Rules.
 - (10) That, the proponent shall install fixed type water sprinklers to cover all dusty places in the premises to impart water spraying intermittently and during loading, unloading of raw materials/products and wastes.
- (11) That, the proponent shall do tree plantation in at least 33% of the area of the land.
- (12) That, the proponent shall implement plan of rain water harvesting with establishment of the project.
- (13) That, the proponent shall install air pollution control devices such as dust catcher, cyclone separator, Bag filters, venturi scrubber, E.S.P., etc. in suitable combination to control emission.
- (14) That, proponent shall make all haul roads pucca and shall maintain a good house keeping by regular cleaning and wetting of the haul roads and dust prone areas.
- (15) That, the proponent shall store all raw materials and products under shed and shall, as far as practicable, do their processing and transfer under foolproof cover (s) and shall install dust catchers over uncovered spaces of processing and transfers.

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- (16) That, the proponent shall do socio-economic works in nearby villages for their welfare and shall pay due compensation to the affected people as per laws and Government schemes.
- (17) That, the proponent shall not alter the flow path or course of any river or stream or water body without prior permission from the competent authority.
- (18) That, the proponent shall install foolproof fume extraction and gas cleaning system.
- (19) That, the proponent shall use fly ash and or fly ash bricks in construction of the project.
- (20) That, the proponent shall maintain the quality and table of ground water.
- (21) That, the proponent shall keep the waste water in close circuit.
- (22) That, the proponent shall use all solid wastes as resource as a raw material or a product.
- (23) That, the proponent shall interlock the production plant with pollution control measures.
- (24) That, the proponent shall adopt clean development mechanism.
- 4. The proponent shall utilize solid wastes in entirety as a resources material for other products and shall install plant(s) for their utilization.
- 5. This shall be valid subject to authenticity of documents furnished in support of application and bonafide ownership and possession of the land by the proponent.
- The Jharkhand State Pollution Control Board reserves the right to revise and/or add any other conditions, if necessary, for the protection of Environment and to ensure pollution control or any.
- 7. The present N.O.C should not be considered as an assurance for granting consent to operate the proposed plant and is subject to installation of all pollution control devices and their monitoring facilities with establishment of the facilities and compliance of all conditions as mentioned above.
- 8. This N.O.C is valid for a period six month from the date of issue.
- 9. This is issued with the approval of competent authority.

(Dr. Mahendra Mahto)

Environmental Engineer

Memo No. 4554

Ranchi, Dated 25.878

<u>Copy forwarded to</u>: M/s. West Bokaro Division, Tata Steel, P.O.-Ghatotand,-825 314, Distt.-Ramgarh(Jharkhand)/Chief inspector of Factories, Doranda, Ranchi/Director Industries, Govt. of Jharkhand,Ranchi/DC, Ramgarh/Regional Office, J.S.P.C Board, Hazaribagh/Concerned officer dealing with consent.

(Dr. Mahendra Mahto)

Environmental Engineer

 $H.Q\General\355\07$



झारखण्ड राज्य प्रदूषण नियंत्रण पूर्षद

JHARKHAND STATE POLLUTION CONTROL BOARD

T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI-834004 Phone No:- 2400852, 2400979, 2400851, Fax No:- 2400850.

Date: 5'5'06

No Objection Certificate under section 25 & 26 of the water (Prevention & Control of pollution) Act, 1974 and under section 21 of the Air (Prevention & Control of pollution) Act, 1981.

Reference application no. 6019 dated 14-01-06 of M/s West Bokaro Division, Tata Steel, Mr. Arun Mishra, chief (CB) West Bokaro Division P.O West Bokaro Division ,Dist_Hazaribagh for expanding the capacity of existing washery-III plant for beneficiation of Raw Coal at Duni, P.O - Ghatotand, P.S Mandu Dist. Hazaribagh. The beneficiation capacity of the industry will be as follows:-

> 1) Raw Coal -15000 Ton/Day (After Expansion)

After considering:

The facts stated in the N.O.C application & Project Report. i)

Provisions of related water (Prevention & control of Pollution) Act, 1974 & Air (Prevention & Control of ii) pollution) Act, 1981.

iii). EMP Submitted.

Affidavit dated 26-04-2006 regarding keeping the effluent in closed circuit. iv)

- N.O.C in favour of unit, based on site Inspection & facts stated in the project report, N.O.C application 3. is hereby accorded subject to the following conditions:-
 - The unit shall obtain consent to operate from State pollution Control Board under section 25 and 26 of the Water (Prevention & Control of pollution) Act, 1974 and section 21 of the Air (Prevention & Control of pollution) Act, 1981 prior to commissioning of the plant.

The unit shall install Effluent Treatment Plant adopting appropriate technology to treat the effluent to the ii)

standard stipulated.

The unit shall keep its effluent in closed circuit. iii)

All tanks used for collection and treatment of effluent shall be made impervious by providing adequate cement iv) concrete/stone masonry/stone slab lining with leak proof materials.

The unit shall install water meter to measure the water consumed for different purposes as per the water V)

(Prevention & Control of pollution) Cess Act, 1977.

The unit shall ensure continuous and uninterrupted power supply so that the pollution control system functions vi) uninterruptedly. Separate energy meters shall be provided for the pollution control systems.

The unit shall upgrade pollution control systems as and when new technologies are available. vii)

The unit shall install suitable Air pollution control devices wherever necessary to control fugitive emission, if viii) any.

Cont

- ix) The unit shall provide Ambient Air Quality Report & Noise level monitoring report before and after commissioning of the plant. The unit shall ensure that the Noise level & AAQ are within the prescribed limit.
- x) The D.G. sets shall be housed properly to minimize noise pollution in and around the factory campus. The height of exhaust pipe shall be raised as per the norms of C.P.C.B.
- xi) The plantation shall be made in every direction in all vacant space available around the factory campus.
- xii) The unit shall prepare and submit a plan of rain water harvesting within Six months.
- xiii) Regular water spraying on haul road etc. shall be done.
- The Jharkhand State Pollution Control Board reserves the right to revise and/or add any other
 conditions, if necessary, for the protection of Environment and to ensure pollution control or any.
- The present N.O.C should not be considered as an assurance for granting consent to operate the proposed plant and is subject to compliance of all conditions as mentioned above.
- This N.O.C is valid for a period of 6 months from the date of issue.

(S.K. Singh)
Member Secretary(I/C)

Memo No. No. Ranchi, Dated 5.5.06

Copy forwarded to M/s West Bokaro Division, Tata Steel, Mr. Arun Mishra Chief (CB) Washery III P.o-Chatotand, Dist-Hazaribagh (Jharkhand) / Chief inspector of Factories, Doranda, Ranchi/Director Industries. Govt. of Jharkhand, Ranchi/Regional Office, J.S.P.C Board, Hazaribagh / officer concerned dealing with consent/PS to Chairman.

Member Secretary(I/C)



To The Regional Officer Jharkhand State Pollution Control Board Near PTC Chowk, Matwari Road, Hazaribag – 825310, Jharkhand

WBD/EMC/4071/003/21 04.01.2021

Dear Sir,

We have been carrying our ambient air quality monitoring at West Bokaro Colliery located at Village Barughutu, P.O-Ghatotand, District-Ramgarh to comply with the various guidelines and permissions issued. We are having one online CAAQMS, one online PM10 analyser as well as AAQ monitoring stations installed at various locations of West Bokaro.

The selection of the monitoring sites was based on the following criteria:

- Downwind direction of predominant wind direction (wind-rose diagram enclosed)
- Proximity to the village to monitor existing air quality
- Accessibility of continuous power supply
- Security concern

The geo-coordinates of the AAQ monitoring locations are provided in the following table:

Monitoring Station	Location	Geo-Coordinates			
		Latitude	Longitude		
CAAQMS	Downwind of West Bokaro	23°47'23" N	85°33'19" E 85°34'11" E		
PM10 Analyser	Chainpur	23°44'17''N			
AAQ-1	Pundi	23°46'39''N	85°32'4" E		
AAQ-2	Parsabera	23°46'12''N	85°34'39" E		
AAQ-3	Duni	23°46'14''N	85°32'59" E		
AAQ-4	Banji	23°47'76''N	85°33'25" E		

This is for your kind information and inputs please if any.

Thanking you,

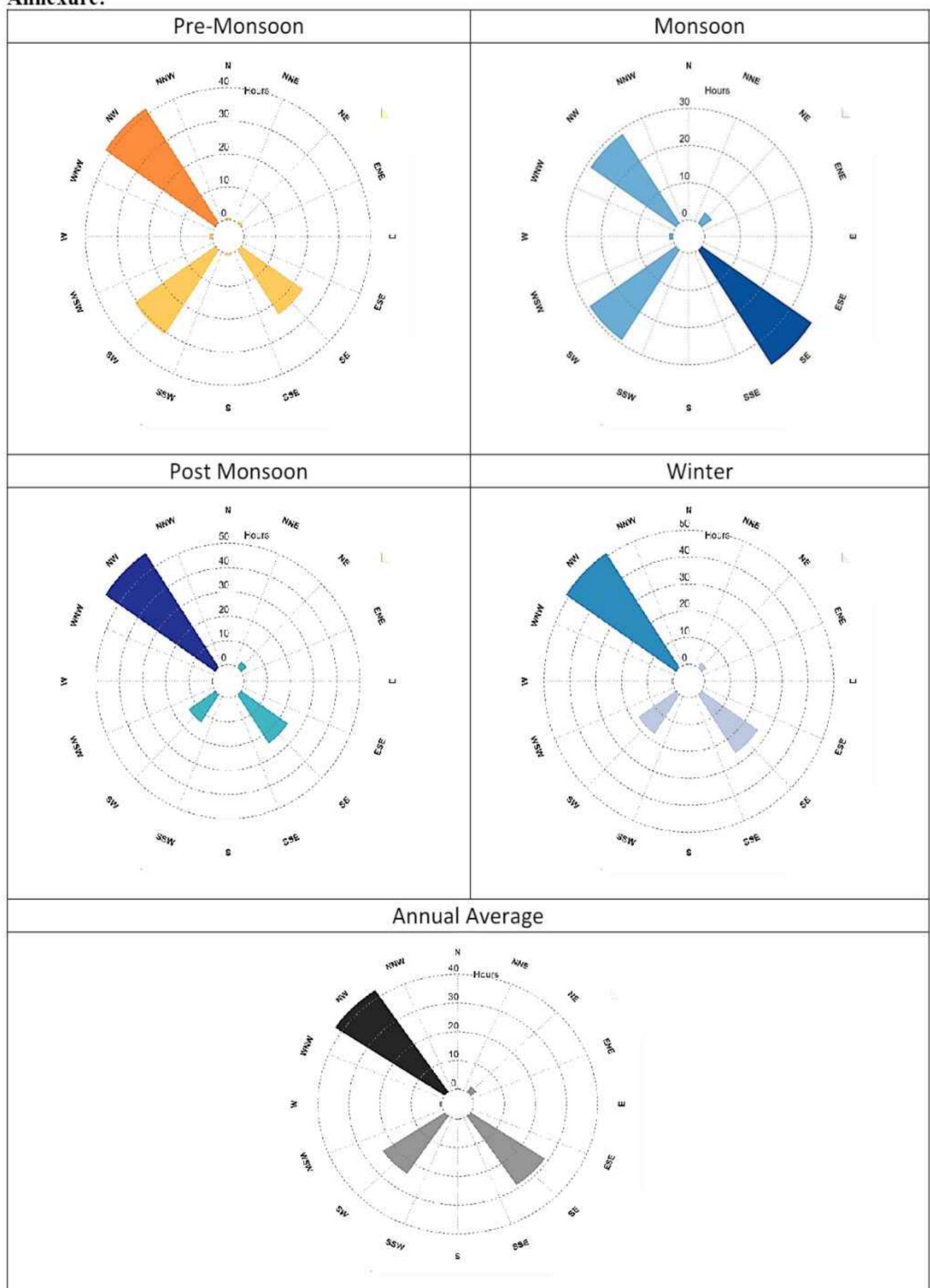
Yours faithfully f: Tata Steel Limited

Head Environment Management RM

Encl: As above



Annexure:



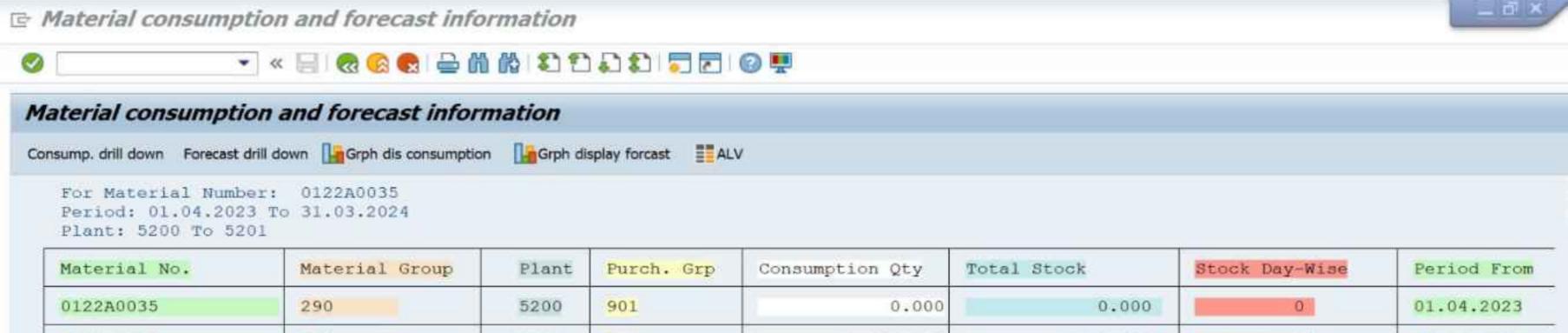
TATA STEEL LIMITED

Annexure-IX

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01.04.2023

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JHARKHAND STATE POLLUTION CONTROL BOARD

T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI -834004 Phone.:2400852, 2400851, Fax:0651- 2400850 www.jspcb.org

FORM 2

[See rule 6(2)]

FORM FOR GRANT OR RENEWAL OF AUTHORIZATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

No. of authorization and date of issue: JSPCB/HO/RNC/HWM-15904898/2024/27 31/03/2024

Reference of application(No. and date): 15904898 06/12/2023

West Bokaro Colliery, TATA Steel Ltd. of Anurag Dixit is hereby granted an authorisation based on the enclosed signed inspection report for generation, collection, reception, storage, transport, reuse, recycling, recovery, pre-processing, co-processing, utilisation, treatment, disposal or any other use of hazardous or other wastes or both on the premises situated at West Bokaro Division, TATA Steel Ltd. PO:Ghatotand, Dist:Ramgarh

Details of Authorisation

Sl.No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity(ton/annum)
1	Cat-I; 5.1 Used/Spent Oil	Kept in MS Drums; Sold out to authorized recyclers	350 KL/Annum
2	Cat-I;33.1 Discarded containers/barrels/liners contaminated with hazardous wastes/chemicals	Kept in MS Tank; Sold out to authorized recyclers	3.6 TPA
3	Cat-I;5.2 Wastes/residues containing oil	Kept in concrete tanks; land fillable onsite SLF	12 TPA
4	Cat-I; 7.4 Non ferrous metal bearing sludge and residues	Kept in room; land fillable onsite SLF	16 TPA

- (1) The authorisation shall be valid for a period of Date of issue to 12.08.2028 years
- (2) The authorisation is subject to the following general and specific conditions (Please specify any conditions that need to be imposed over and above general conditions, if any):

A General conditions of authorisation:

- The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the
 rules made there under.
- The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
- The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
- Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
- 5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.
- The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"
- It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
- The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
- 9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
- 10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
- The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
- 12. An application for the renewal of an authorisation shall be made as laid down under these Rules.
- Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
- 14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

B Specific conditions:

- 1. That, the occupier shall take prior permission of the Board to close down the plant.
- That, the renewal of authorization will be subject to compliance of the conditions laid down in this authorization.
- That, the occupier shall comply with the conditions as per the guidelines prescribed by the MoEF for CPCB.
- 4. That, the occupier shall comply with all the conditions laid down in this authorization.
- That, the occupier shall submit quarterly report on hazardous wastes generated and consumed in its sources, products generated or resources conserved (specifying the details like type and quantity of resources conserved) to the Board.
- 6. That, the occupier shall maintain a log book containing information on quantity on generation, date wise utilization of the same and its disposal, etc.
- 7. That, the occupier shall maintain record of Hazardous Waste utilized, Hazardous Waste generated and disposal as per form-3 and shall submit the annual returns in form-4 as per Rule 20 (1) and (2) of the Hazardous and other waste (Management & Transboundary Movement) Rules, 2016 to the Board.
- 8. That, the occupier shall comply with all the directions given by standard operating procedure.
- That, the occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes.
- 10. That, the hazardous and other wastes generated in the establishment of an occupier shall be sent or sold to an authorised actual user or shall be disposed of in an authorised disposal facility.
- 11. That, the hazardous and other wastes shall be transported from an occupier's establishment to an authorised actual user or to an authorised disposal facility in accordance with the provisions of these rules.
- 12. That, the occupier shall take all the steps while managing hazardous and other wastes to-
- (a) contain contaminants and prevent accidents and limit their consequences on human beings and the environment; and
- (b) provide persons working in the site with
- 13. That, the occupier shall comply with all the conditions laid down in this authorization mentioned in general and specific conditions.
- 14. That, the occupier shall install a display Board outside its plant showing details such as

(a) status of CTO;

(b) Status of authorization granted;

(c) Disposal/reuse of hazardous waste generated in the plant and other relevant information as per prescribed guideline and update the same as required.

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Vatindra Kumar

Das

Natindra Kumar

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Date: 2024.03.31

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Memo No:JSPCB/HO/RNC/HWM-15904898/2024/27

Date: 31/03/2024

Y. K. Das Member Secretary

Copy To:

Regional Officer, Regional Office, JSPCB, Hazaribagh for information and necessary action.

Yatindra
Digitally signed
by Yatindra
Kumar Das

Kumar Das

Date: 2024 03 31 Secretary
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JHARKHAND STATE POLLUTION CONTROL BOARD



T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI -834004 Phone.:2400852, 2400851, Fax:0651- 2400850 www.jspcb.org

FORM 2

[See rule 6(2)]

FORM FOR GRANT OR RENEWAL OF AUTHORIZATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

No. of authorization and date of issue: JSPCB/HO/RNC/HWM-16573162/2024/43 29/05/2024

Reference of application(No. and date): 16573162 06/12/2023

3. 20 MW Captive Power House & 5MW DG set of West Bokaro Division, TATA Steel Ltd. of Anurag Dixit is hereby granted an authorisation based on the enclosed signed inspection report for generation, collection, reception, storage, transport, reuse, recycling, recovery, pre-processing, co-processing, utilisation, treatment, disposal or any other use of hazardous or other wastes or both on the premises situated at West Bokaro Division, TATA Steel Ltd. PO:Ghatotand, Dist:Ramgarh

Details of Authorisation

Sl.No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity(ton/annum)	
1	Cat-I; Used/Spent Oil	Kept in MS Drums; Sold out to authorized recyclers	5 TPA	
2	Cat-I; Wastes/residues containing oil	Kept in concrete tanks; land fillable onsite SLF	10 TPA 5 TPA	
3	Cat-I; Discarded containers/barrels/liners contaminated with hazardous wastes/chemicals	Kept in MS Drums; Sold out to authorized recyclers		

- (1) The authorisation shall be valid for a period of Date of issue to 08.10.2028 years
- (2) The authorisation is subject to the following general and specific conditions (Please specify any conditions that need to be imposed over and above general conditions, if any):

A General conditions of authorisation:

- The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the
 rules made there under.
- The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.

- The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
- Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
- 5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.
- 6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"
- It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
- The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
- 9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
- 10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
- 11. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
- 12. An application for the renewal of an authorisation shall be made as laid down under these Rules.
- Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
- 14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

B Specific conditions:

- 1. That, the occupier shall take prior permission of the Board to close down the plant.
- That, the renewal of authorization will be subject to compliance of the conditions laid down in this authorization.
- That, the occupier shall comply with the conditions as per the guidelines prescribed by the MoEF for CPCB.
- 4. That, the occupier shall comply with all the conditions laid down in this authorization.
- That, the occupier shall submit quarterly report on hazardous wastes generated and consumed in its sources, products generated or resources conserved (specifying the details like type and quantity of resources conserved) to the Board.
- 6. That, the occupier shall maintain a log book containing information on quantity on generation, date wise utilization of the same and its disposal, etc.
- 7. That, the occupier shall maintain record of Hazardous Waste utilized, Hazardous Waste generated and disposal as per form-3 and shall submit the annual returns in form-4 as per Rule 20 (1) and (2) of the Hazardous and other waste (Management & Transboundary Movement) Rules, 2016 to the Board.
- 8. That, the occupier shall comply with all the directions given by standard operating procedure.
- That, the occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes.
- 10. That, the hazardous and other wastes generated in the establishment of an occupier shall be sent or sold to an authorised actual user or shall be disposed of in an authorised disposal facility.
- 11. That, the hazardous and other wastes shall be transported from an occupier's establishment to an authorised actual user or to an authorised disposal facility in accordance with the provisions of these rules.
- 12. That, the occupier shall take all the steps while managing hazardous and other wastes to-
- (a) contain contaminants and prevent accidents and limit their consequences on human beings and the environment; and
- (b) provide persons working in the site with
- 13. That, the occupier shall comply with all the conditions laid down in this authorization mentioned in general and specific conditions.
- 14. That, the occupier shall install a display Board outside its plant showing details such as

(a) status of CTO;

(b) Status of authorization granted;

(c) Disposal/reuse of hazardous waste generated in the plant and other relevant information as per prescribed guideline and update the same as required.

Ram Pravesh Kumar

Digitally signed by Ram Pravesh Kumar Date: 2024.05.29 06:23:42 +05'30'

Memo No:JSPCB/HO/RNC/HWM-16573162/2024/43 Date: 29/05/2024

[Ram Pravesh Kumar] Section Head, Hazaribagh

Copy To:

Regional Officer, Regional Office, JSPCB, Hazaribagh for information and necessary action.

Ram Pravesh Ram Pravesh Kumar

Kumar

[Ram Pravesh Kumar]

[Ram Pravesh Kumar]

Section Head, Hazaribagh

JHARKHAND STATE POLLUTION CONTROL BOARD



T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI -834004 Phone.:2400852, 2400851, Fax:0651- 2400850 www.jspcb.org

FORM 2

[See rule 6(2)]

FORM FOR GRANT OR RENEWAL OF AUTHORIZATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

No. of authorization and date of issue: JSPCB/HO/RNC/HWM-8769540/2021/12 04/03/2021

Reference of application(No. and date): 8769540 21/08/2020

Washery-II, West Bokaro Division, TATA Steel Ltd. of Manish Mishra is hereby granted an authorisation based on the enclosed signed inspection report for generation, collection, reception, storage, transport, reuse, recycling, recovery, pre-processing, co-processing, utilisation, treatment, disposal or any other use of hazardous or other wastes or both on the premises situated at West Bokaro Division, TATA Steel Ltd. PO:Ghatotand, Dist:Ramgarh

Details of Authorisation

Sl.No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity(ton/annum)
1	Used Oil - 12 KL/Annum	Manually in MS drum and closed tanker	12 KL/Annum
2	Waste/Residue containing Oil - 4 TPA	Manually in MS drum and closed tanker	4 TPA
3	Discarded Container/Barrels/Lines contaminated - 1 TPA	Closed Tanker	1 TPA
4	Others - 0.2 TPA	Closed Tanker	0.2 TPA

- (1) The authorisation shall be valid for a period of Date of issue to 31.12.2025 years
- (2) The authorisation is subject to the following general and specific conditions (Please specify any conditions that need to be imposed over and above general conditions, if any):

A General conditions of authorisation:

- The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the
 rules made there under.
- The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.

- The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
- Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
- 5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time.
- 6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"
- It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
- The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
- 9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
- 10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
- 11. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
- 12. An application for the renewal of an authorisation shall be made as laid down under these Rules.
- Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
- 14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

B Specific conditions:

- 1. That, the occupier shall take prior permission of the Board to close down the plant.
- 2. That, the renewal of authorization will be subject to compliance of the conditions laid down in this authorization.
- 3. That, the occupier shall comply with the conditions as per the guidelines prescribed by the MoEF for CPCB.
- 4. That, the occupier shall comply with all the conditions laid down in this authorization.
- 5. That, the occupier shall submit quarterly report on hazardous wastes generated and consumed in its sources, products generated or resources conserved (specifying the details like type and quantity of resources conserved) to the Board.
- 6. That, the occupier shall maintain a log book containing information on quantity on generation, date wise utilization of the same and its disposal, etc.
- 7. That, the occupier shall maintain record of Hazardous Waste utilized, Hazardous Waste generated and disposal as per form-3 and shall submit the annual returns in form-4 as per Rule 20 (1) and (2) of the Hazardous and other waste (Management & Transboundary Movement) Rules, 2016 to the Board.
- 8. That, the occupier shall comply with all the directions given by standard operating procedure.
- 9. That, the occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes.
- 10. That, the hazardous and other wastes generated in the establishment of an occupier shall be sent or sold to an authorised actual user or shall be disposed of in an authorised disposal facility.
- 11. That, the hazardous and other wastes shall be transported from an occupier's establishment to an authorised actual user or to an authorised disposal facility in accordance with the provisions of these rules.
- 12. That, the occupier shall take all the steps while managing hazardous and other wastes to-
- (a) contain contaminants and prevent accidents and limit their consequences on human beings and the environment; and
- (b) provide persons working in the site with
- 13. That, the occupier shall comply with all the conditions laid down in this authorization mentioned in general and specific conditions.
- 14. That, the occupier shall install a display Board outside its plant showing details such as
- (a) status of CTO;
- (b) Status of authorization granted;
- (c) Disposal/reuse of hazardous waste generated in the plant and other relevant information as per prescribed guideline and update the same as required.

RAM PRAVESH POLITION CONTROL BOARD, postalCode-634004, st--)hardhand, KUMAR

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Digitally signed by RAM PRAVESH KUMAR DN: c=IN, o=JHARRHAND STATE

Ram Pravesh Kumar Section Head, Hazaribagh

Memo No:JSPCB/HO/RNC/HWM-8769540/2021/12 Date: 04/03/2021

Copy To:

M/s Washery-II, West Bokaro Division, TATA Steel Ltd. West Bokaro Division, TATA Steel Ltd./Regional Officer, Hazaribagh for information and necessary action.

> RAM PRAVESH CONTROL SCARD, postalCade=834004, KUMAR

DN: 0-IN, 0-JHARIGHAND STATE POLLUTION st-- Stankhand. 2,5.4.20--c258a26fr85F1+7bb80b6a217b279 434NS2x583b121726d1=80x80388029e4,

Ram Pravesh Kumar Section Head, Hazaribagh



JHARKHAND STATE POLLUTION CONTROL BOARD

T.A. DIVISION BUILDING (GROUND FLOOR), H.E.C., DHURWA, RANCHI -834004 Phone.:2400852, 2400851, Fax:0651- 2400850 www.jspcb.org

FORM 2

[See rule 6(2)]

FORM FOR GRANT OR RENEWAL OF AUTHORIZATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

No. of authorization and date of issue: JSPCB/HO/RNC/HWM-15377165/2024/30 31/03/2024

Reference of application(No. and date): 15377165 24/01/2023

Washery-III, TATA Steel Ltd., West Bokaro Division of Anurag Dixit is hereby granted an authorisation based on the enclosed signed inspection report for generation, collection, reception, storage, transport, reuse, recycling, recovery, pre-processing, co-processing, utilisation, treatment, disposal or any other use of hazardous or other wastes or both on the premises situated at West Bokaro Division, TATA Steel Ltd. PO:Ghatotand, Dist:Ramgarh

Details of Authorisation

Sl.No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity(ton/annum)
1	Cat-I;33.1 Discarded containers/barrels/liners contaminated with hazardous wastes/chemicals	Kept in under shed, sold out to authorized recyclers	1 KL/Annum
2	Cat-I; 5.1 Used/Spent Oil	Kept in steel drums, sold out to authorized recyclers	12 KL/Annum
3	Cat-I; 5.2 Wastes/residues containing oil	Kept in under shed, sold out to authorized recyclers	5 T/Annum
4	Others	Container Shipping, sold out to authorized recyclers	0.2 T/Annum

- (1) The authorisation shall be valid for a period of Date of issue to 06.05.2028 years
- (2) The authorisation is subject to the following general and specific conditions (Please specify any conditions that need to be imposed over and above general conditions, if any):

A General conditions of authorisation:

The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the
rules made there under.

- The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
- The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
- Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
- The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation
 is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their
 possible impacts and also carry out mock drill in this regard at regular interval of time.
- 6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty"
- It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
- The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
- 9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
- 10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
- 11. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
- 12. An application for the renewal of an authorisation shall be made as laid down under these Rules.
- Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
- 14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

B Specific conditions:

- 1. That, the occupier shall take prior permission of the Board to close down the plant.
- That, the renewal of authorization will be subject to compliance of the conditions laid down in this authorization.
- That, the occupier shall comply with the conditions as per the guidelines prescribed by the MoEF for CPCB.
- 4. That, the occupier shall comply with all the conditions laid down in this authorization.
- That, the occupier shall submit quarterly report on hazardous wastes generated and consumed in its sources, products generated or resources conserved (specifying the details like type and quantity of resources conserved) to the Board.
- 6. That, the occupier shall maintain a log book containing information on quantity on generation, date wise utilization of the same and its disposal, etc.
- 7. That, the occupier shall maintain record of Hazardous Waste utilized, Hazardous Waste generated and disposal as per form-3 and shall submit the annual returns in form-4 as per Rule 20 (1) and (2) of the Hazardous and other waste (Management & Transboundary Movement) Rules, 2016 to the Board.
- 8. That, the occupier shall comply with all the directions given by standard operating procedure.
- That, the occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes.
- 10. That, the hazardous and other wastes generated in the establishment of an occupier shall be sent or sold to an authorised actual user or shall be disposed of in an authorised disposal facility.
- 11. That, the hazardous and other wastes shall be transported from an occupier's establishment to an authorised actual user or to an authorised disposal facility in accordance with the provisions of these rules.
- 12. That, the occupier shall take all the steps while managing hazardous and other wastes to-
- (a) contain contaminants and prevent accidents and limit their consequences on human beings and the environment; and
- (b) provide persons working in the site with
- 13. That, the occupier shall comply with all the conditions laid down in this authorization mentioned in general and specific conditions.
- 14. That, the occupier shall install a display Board outside its plant showing details such as

(a) status of CTO;

(b) Status of authorization granted;

(c) Disposal/reuse of hazardous waste generated in the plant and other relevant information as per prescribed guideline and update the same as required.

Yatindra Das Digitally signed by Yatindra Kumar Das Date: 2024.03.31 17:16:36 +05'30'

Memo No:JSPCB/HO/RNC/HWM-15377165/2024/30

Date: 31/03/2024

Y. K. Das Member Secretary

Copy To:

M/s Washery-III, TATA Steel Ltd., West Bokaro Division/Regional Officer, Regional Office, JSPCB,

Dhanbad for information and necessary action.

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Vatindra Kumar

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V. K. Das

Member Secretary



The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division (Ground Floor),
H.E.C. Dhurva, Ranchi – 834004
Jharkhand

WBD/EMC/4013/050/2024

Date: 27.06.2024

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RL RAMSARH CANTI HD (829122)
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To:THE MEMBER SEC.DHURWA
PIN:834004. Emurwa SO
From:AREA MANASER.BHATOTAND
Wt:650ms.REG=17.0
Ant:43.66.Tax:6.66.Ant.Pain:44.00(Cash)
(Track on www.indiedost.dov.in)
(Dial 18002666868) (Wear Masks, Stay Sefe)

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Subject: Submission of Annual Hazardous Waste Return (Form-4) of West Bokaro Colliery unit of West

Bokaro Division, Tata Steel Limited for the year 2023-24

Dear Sir,

Please find enclosed herewith the duly filled Annual Hazardous Waste Return (Form-4) for the year 2023-24 under Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016 for West Bokaro Colliery unit of West Bokaro Division, Tata Steel Ltd.

Kindly acknowledge the same, oblige & place in your records.

Thanking you, Yours sincerely,

Area Manager (Environment)
West Bokaro Division
Tata Steel Ltd.

Encl: As Above

Copy to: The Regional Officer, State Pollution Control Board, PTC Chowk, Matwari, Hazaribagh – 825301 (Jharkhand)

TATA STEEL LIMITED

FORM-4

[See rules 6(5), 13(8), 16(6) and 20(2)]

FORM FOR FILING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March]

1	Name and address of facility	•	West Bokaro Colliery, West Bokaro Division, TATA Steel Ltd., P.O Ghatotand, Ramgarh - 825314, Jharkhand
2	Authorization No. and Date of issue		JSPCB/HO/RNC/HWM-15904898/2024/27, Dated: 31.03.2024
3	Name of the authorized person & full address with telephone, fax number and e-mail	**	Mr. Sanjoy De/ Mr. Raj Ankur Head (Q-AB) / Head (Q-SEB), West Bokaro Division, TATA Steel Ltd., PO: Ghatotand, Dist: Ramgarh-825314, Jharkhand Phone: 06545-262362, Fax: 06545-262221 Email: wbok.env@tatasteel.com
4	Production during the year (Product wise), wherever applicable		Raw Coal production for FY-24: 5.4 MT

Part A. To be filled by hazardous waste generators

_					
1	Total quantity of waste generated category v	vise			
	5.1 Used Oil	:	322.6 KL		
	5.2 Wastes or residues containing oil		1.03 T (jute - oil soaked material)		
	33.1 Empty barrels / containers / liners contaminated with hazardous chemicals / wastes		200 Nos.		
	Non-Ferrous	:	15.35 T		
	Waste lead acid batteries	:	7.54 T		
2	Quantity dispatched				
	(i) to disposal facility	:	Jute – Approx. 1.03 T disposed at designated place (All jute disposed off in concrete impervious bin)		
	(ii) to recycler or co-processors or pre- processor	**	322.6 KL sold to following authorized recyclers: 1. Mangalam Lub. Pvt. Ltd., Ranchi		
			2. Unison Lubricant India Pvt. Ltd.		
			Nos. sold to following authorized recyclers: S.S Enterprises, Jojobera, Jamshedpur		
			Combined submitted with WB Colliery		
	(iii) others	0			
3	Quantity utilized in-house, if any	:	NA		
4	Quantity in-storage at the end of the year	*	Approx. 35 KL (stored in underground storage pit)		

Date: 25.06.2024 Place: Ghatotand Signature of the Occupier or Operator of the disposal facility



The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division (Ground Floor),
H.E.C. Dhurva, Ranchi – 834004
Jharkhand

WBD/EMC/4013/053/2024

Date: 27.06.2024

RIJAJBASBSIIN 1VR:82/4383848831 HIA/DI HID RL RAMSARH CANTT HD (829122) Counter No:1,29/66/2024.12:12 To:THE MEMBER SEC.DHURWA PIN:834004. Dhurwa SO From:AREA MAMASER.GHATOTAND Wt:65ons.RES=1/.0 Act:43.66.Tax:6.66.Ant.Paid:44.00(Cash) (Track on HAW.INGIBDOSt.GOV.IN) (Dis: 18002666868) (Wear Masks, Stay Safe)

RIJOJ84682BIN IVR:8274363846828 #JAHAR MAD RL RAMBARH CANTT NO (829122) Counter No:1.29/86/2024.12:12 To:THE REGILMAL .HAZARIERSH PIN:825301, Hazaribean no Fron:AREA MANAGER.BANTOTAND #1:65cos.RES=17.0 Ast:43.66.lex:6.86.Ast.Faid:44.00(Cash) (Track on Www.incieoost.cov.in)

Subject: Submission of Annual Hazardous Waste Return (Form-4) of Power House unit of West Bokaro

Division, Tata Steel Limited for the year 2023-24

Dear Sir,

Please find enclosed herewith the duly filled Annual Hazardous Waste Return (Form-4) for the year 2023-24 under Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016 for Power house unit of West Bokaro Division, Tata Steel Ltd.

Kindly acknowledge the same, oblige & place in your records.

Thanking you, Yours sincerely,

Area Manager (Environment)
West Bokaro Division
Tata Steel Ltd

Encl: As Above

Copy to: The Regional Officer, State Pollution Control Board, PTC Chowk, Matwari, Hazaribagh – 825301 (Jharkhand)

TATA STEEL LIMITED

FORM-4

[See rules 6(5), 13(8), 16(6) and 20(2)]

FORM FOR FILING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March]

1	Name and address of facility	9	Power House, West Bokaro Division, TATA Steel Ltd., P.O Ghatotand, Ramgarh-825314, Jharkhand
2	Authorization No. and Date of issue		JSPCB/HO/RNC/HWM-16573162/2024/43, Dated: 29/05/2024
3	Name of the authorized person & full address with telephone, fax number and e-mail		Mr. Bappa Bole Head (Power Generation), West Bokaro Division, TATA Steel Ltd., PO: Ghatotand, Dist: Ramgarh-825314, Jharkhand Phone: 06545-262362, Fax: 06545-262221 Email: wbok.env@tatasteel.com
4	Production during the year FY24 (product wise), wherever applicable		98150 MWH

Part A. To be filled by hazardous waste generators

1	Total quantity of waste generated category wis	e		
	5.1 Used Oil	:	1.79 KL	
	5.2 Wastes or residues containing oil:	:	0.25 T	
	33.1 Empty barrels / containers / liners contaminated with hazardous chemicals / wastes	:	combined submitted with WB Colliery	
	Waste lead acid batteries	:	combined submitted with WB Colliery	
2	Quantity dispatched			
	(i) to disposal facility	1	0.25 KL disposed in concrete impervious bin	
	(ii) to recycler or co-processors or pre- processor	2	 1.79 KL sold to following authorized recyclers: 1. Mangalam Lub. Pvt. Ltd., Ranchi 2. Unison Lubricant India Pvt. Ltd. 	
	(iii) others	:	Empty barrels reused at site	
3	Quantity utilized in-house, if any	:	Nil	
	Quantity in-storage at the end of the year		0.67 KL	

Date : 25.06.2024 Place : Ghatotand Signature of the Occupier or Operator of the disposal facility



The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division (Ground Floor),
H.E.C. Dhurva, Ranchi – 834004
Jharkhand

WBD/EMC/4013/051/2024

Date: 27.06.2024

RJ303B45B31IN 1VR:82/4303B48B31 MINADU BED
RL RAMSARH CANTI HD (829122)
Counter No:1.27/06/2024.12:12
To:THE MEMBER SEC.DHURWA
PIN:834004. Emurwa SO
From:AREA MANASER.BHATOTAND
Wt:650ms.REG=17.0
Ant:43.66.Tax:6.66.Ant.Pain:44.00(Cash)
(Track on www.indiedost.dov.in)
(Dial 18002666868) (Wear Masks, Stay Sefe)

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Subject: Submission of Annual Hazardous Waste Return (Form-4) of Washery-II unit of West Bokaro

Division, Tata Steel Limited for the year 2023-24

Dear Sir,

Please find enclosed herewith the duly filled Annual Hazardous Waste Return (Form-4) for the year 2023-24 under Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016 for Washery-II unit of West Bokaro Division, Tata Steel Ltd.

Kindly acknowledge the same, oblige & place in your records.

Thanking you, Yours sincerely,

Area Manager (Environment)
West Bokaro Division
Tata Steel Ltd.

Encl: As Above

Copy to: The Regional Officer, State Pollution Control Board, PTC Chowk, Matwari, Hazaribagh – 825301 (Jharkhand)

TATA STEEL LIMITED

FORM-4

[See rules 6(5), 13(8), 16(6) and 20(2)]

FORM FOR FILING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March]

1	Name and address of facility	:	Washery-II, West Bokaro Division, TATA Steel Ltd., P.O Ghatotand, Ramgarh-825314, Jharkhand	
2	Authorization No. and Date of issue	:	JSPCB/HO/RNC/HWM-8769540/2021/12, Dated: 04.03.2021	
3	Name of the authorized person & full address with telephone, fax number and e-mail	:	Mr. Gustad Framroze Taraporewalla Head Washery-II, West Bokaro Division, TATA Steel Ltd., PO: Ghatotand, Dist: Ramgarh-825314, Jharkhand Phone: 06545-262362, Fax: 06545-262221 Email: wbok.env@tatasteel.com	
4	Production during the year (product wise), wherever applicable	:	Clean Coal for FY-24 0.814 MT Middling for FY-24 0.719 MT Tailing for FY 24 0.459 MT Reject for FY 24 0.612 MT	

Part A. To be filled by hazardous waste generators

1 Total quantity of waste generated category wise 5.1 Used Oil	1:	10.74 KL			
5.2 Wastes or residues containing oil		0.57 T			
33.1 Empty barrels / containers / liners contaminated with hazardous chemicals / wastes	:	0.809 T			
Waste lead acid batteries	:	Combined submitted with WB Colliery			
2 Quantity dispatched	Quantity dispatched				
(i) to disposal facility	:	0.57 T (disposed in concrete impervious bin)			
(ii) to recycler or co-processors or pre- processor		10.74 KL sold to following authorized recyclers: 1. Mangalam Lub. Pvt. Ltd., Ranchi 2. Unison Lubricant India Pvt. Ltd. 0.809 T sold to following authorized recyclers:			
(iii) others	:	S.S Enterprises, Jojobera, Jamshedpur Combined submitted with WB Colliery			
Quantity utilized in-house, if any	:	Nil Nil			
Quantity in-storage at the end of the year	:	Nil			

Date: 25.06.2024
Place: Ghatotand

Signature of the Occupier or Operator of the disposal facility



The Member Secretary,
Jharkhand State Pollution Control Board,
T.A. Division (Ground Floor),
H.E.C. Dhurva, Ranchi – 834004
Jharkhand

WBD/EMC/4013/052/2024

Date: 27.06.2024

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RL RAMSARH CANTT HD (83912Z)
Counter No:1.29/66/2824.12:12
To:THE MEMBER SEC.DHIRWA
PIN:834884. Immrwa SO
From:AREA MANASER.BHATOTAND
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(Dia: 18882666882 (Wear Masks, Stay Safe)

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Counter No:1.29/86/2024,12:12
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(Track on www.inciaoost.cov.in)

Subject: Submission of Annual Hazardous Waste Return (Form-4) of Washery-III unit of West Bokaro

Division, Tata Steel Limited for the year 2023-24

Dear Sir,

Please find enclosed herewith the duly filled Annual Hazardous Waste Return (Form-4) for the year 2023-24 under Hazardous and Other Wastes (Management & Transboundary Movement) Rules 2016 for Washery-III unit of West Bokaro Division, Tata Steel Ltd.

Kindly acknowledge the same, oblige & place in your records.

Thanking you, Yours sincerely,

Area Manager (Environment)
West Bokaro Division
Tata Steel Ltd.

Encl: As Above

Copy to: The Regional Officer, State Pollution Control Board, PTC Chowk, Matwari, Hazaribagh – 825301 (Jharkhand)

TATA STEEL LIMITED

FORM-4

[See rules 6(5), 13(8), 16(6) and 20(2)]

FORM FOR FILING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March]

1	Name and address of facility	***	Washery-III, West Bokaro Division, TATA Steel Ltd., P.O Ghatotand, Ramgarh-825314, Jharkhand	
2	Authorization No. and Date of issue	:	JSPCB/HO/RNC/HWM-1 Dated: 31/03/2024	5377165/2024/30,
3	Name of the authorized person & full address with telephone, fax number and e-mail		1.4 DIC.	
4	Production during the year (product wise), wherever applicable	:	Clean Coal for FY-24 Middling for FY-24 Tailing for FY 24 Reject for FY 24	1.473 MT 0.868 MT 0.684 MT 0.567 MT

Part A. To be filled by hazardous waste generators

	Total quantity of waste generated category wis		4.81 KL	
	5.1 Used Oil		0.50 T (jute -oil soaked material)	
	5.2 Wastes or residues containing oil:	•		
	33.1 Empty barrels / containers / liners contaminated with hazardous chemicals / wastes		0.950 T	
	Waste lead acid batteries	:	combined submitted with WB Colliery	
,	Overtity dispatched			
2	1 1 6 114	:	0.50 T disposed in concrete impervious bin	
	(ii) to recycler or co-processors or pre-	:	4.81 KL sold to following authorized recyclers: 1. Mangalam Lub. Pvt. Ltd., Ranchi	
	processor		2. Unison Lubricant India Pvt. Ltd.	
	STREET, SQUARE STREET, SQUARE,	Ħ	0.950 T sold to following authorized recyclers:	
			1. S.S Enterprises, Jojobera, Jamshedpur	
	(iii) others	:	combined submitted with WB Colliery	
2	Quantity utilized in-house, if any	1	Nil	
3	Quantity utilized in-nodse, if diff Quantity in-storage at the end of the year	1	1.24 KL	

Date: 25.06.2024 Place: Ghatotand Signature of the Occupier or Operator of the disposal facility

Report of the examining authority (to be filled in for every medical examination whether initial or periodical orRe-examination or after cure/control of disability) Annexure-XII Certificate No. 1ME | 24 | 2024 | ID Number. 365727520497 | 1. | 25 - 11 . 15 99 24. Result of Lung Function (Spirom General development Good / Fair / Poor Height Cms 5 **Parameters** Weight Kg 60 Eyes Forced Vital Capacity (FEV) Right Eye 6/6 cg/an Segured that Shey Sherests: THANISH KUMAR THAKUR employed as Visual acuity-Distant vision (with or without Forced Vital Capacity 1 glasses Left Eye (FEV1) Any organic disease of eyes FEVI FVC CACH Night blindness Peak Expiratory Flowhas been examined for an initial/periodical medical Colour blindness (IV) YESING Spirometry Report Enclosed: examination. He/she* appears to be...... years of age. The findings of the Squint (to be tested in special cases) (v) examining authority and givers in the authority preed that Shri/Shrimati* 25. Cardiological Assessment 5. Ears (1) Hearing Right Ear WINL Left Ear (a)* is medically fit for any employment in mines Any organic disease Respiratory System Electrocardiograph (12 leads) finding Chest Measurement Enclosed ECG -After full inspiration Cms (i) any employment in mine: or After full Expiration 26. Neurological Assessment (ii) any employment below ground, or Circulatory System (iii) any employment or work...... Blood Pressure Pulse Superficial Reflexes (c)*is suffering from...... and should get this disability* Deep Reflexes Abdomen cured/controlled and should be again examined within a period of months. Peripheral Circulation She/he will appear for re-examination with the result of test Tenderness YES/NO-Vibration Syndromes YES/NOof......and the opinion of Liver ENLARGED Spleen PALPABLE YES/NO-27 ILO Classification of Chest Radio Tumour PALPABLE be permitted/not* permitted to carry on his duties during this period. YES/NO-Nervous System Profusion of Pnaumoconiotic Opacities History of Fits or Epilepsy YESINO Present / Absent Buen mark on (RE) Thumb Paralysis YES/NO-Mental Health Normal/Abnormal 28. Audiometry Finding Locomotor System Identification Mark..... Skin **Gonduction Type** DAG 12 Hernia Ear Conduction CIAM Hydrocele Bone Conduction 14 Any other abnormality Enclosed Audiometry Report Urine Reaction 29. Pathological / Microbiological Inv Albumin MANISH KUMAR THAKUR on the candidate Sugar Slino Skiagram of Chest Any other test considered necessary by the examining authority Any opinion of specialist considered necessary Blood Group Blood Blood Blood Group Blood Place: TM H 10B

Date: 01.06.2024 Enclosed Investigation Report

23. Biochemistry

Signature of the examining authority

DR VIJAY KUMAR

Name and designation in Block letters

1 Blood Sugar: 9

- 7 (-c) Random :- -----

Speech Defect Tremor

Blood - Ho%, TLC DLC P

Blood Sugar - Fasting & Pi

Blood Urea, Creatinine

Predic

31

\$2

Finding

Left Ear

Normal

Normal

Additional

Auscultation

Neurological Disturbance

Test

29. Special Tests for Mn Exposure Behaviour Disturbance

Lipid Profile

Urine Routine Stool Routine

Adiadocokines

Annexure-XII

Certificate No. PME 504 2024 pNumber 270102
Date of Birth 03.05.1576
Certified that Shri/Shrimati* SRUKHNT PRASHD employed as mine. Form BNo has been examined for an initial/periodical medical examination. He/she* appears to be years of age. The findings of the examining authority are given in the attached sheet. It is considered that Shri/Shrimati*
(a)* is medically fit for any employment in mines.
(b)* is suffering from
(i) any employment in mine, or (ii) any employment below ground, or (iii) any employment or work
(c)*is suffering from. cured/controlled and should be again examined within a period of months. She/he will appear for re-examination with the result of test and the opinion of specialist from She/he may be permitted/not* permitted to carry on his duties during this period.
at many con Davel

Identification Mark

Left thumb impression the candidate

Signature of the examining authority Name and designation in Block letters

DR. VIJAY KUMAR Sr. Registrar (AFIH) Medical Office Rest. Wast 37227 BCMR

1	General development	Good / Fair / Poor			
2	Height	Cms / 10			
3	Weight	Kg 1.			
4	Eyes	10			
(0)	Visual acuity-Distant vision (with or without glasses)	Right Eye			
(ii)	Any organic disease of eyes	707			
(111)	Night blindness	NAO			
(tv)	Colour blindness	NAD YES/NO_			
-	TO THE RESIDENCE OF THE PARTY O	DAN			
(v)	Squint (to be tested in special cases)	NDI			
5	Ears	Book Fad . II			
(1)	Hearing	Left Ear WALL			
(H)	Any organic disease				
6	Respiratory System				
	Chest Measurement				
	After full inspiration	Cms 102			
	After full Expiration	Cms 96			
7	Circulatory System	1000			
	Blood Pressure	137/30			
	Pulse	68			
8	Abdomen	-21510000000000			
	Tenderness	YES/NO			
	Liver ENLARGED	YES/NO			
	Spleen PALPABLE	YES/NO			
	Tumour PALPABLE	YES/NO			
9	Nervous System				
	History of Fits or Epilepsy	YES/NO			
	Paralysis	YES NO			
36.	Mental Health	Smal/Abnomat			
10	Locomotor System				
11	Skin	12			
12	Hernia	NAD			
13	Hydrocele	NAVO			
14	Any other abnormality	10000			
15	Unine				
	Reaction				
	Albumin	NIL			
	Sugar	1010			
16	Skiagram of Chest	- 12.			
17.	Any other test considered necessary by the examining authority				
18.	Any opinion of specialist considered necessary				
19	Blood TLC 4907	100			
20	BloodDLC N 58 L 4 5 M C4	ENL B			
21	Blood Group R POSI TIVE	0.55			
22	Hb% 14.0	+			

23. Biochemistry

	gar 117	
2)Blood Un	ea: 4)S	Sr Creatinine 8 5 Sr Cholesterol (T) 113
(HDL)	(LDL)	6) Electrolytes Na* K*

24. Result of Lung Function (Spirometry)

Parameters	Predicted Value	Performed Value	% of Predicted
Forced Vital Capacity (FEV)			,
Forced Vital Capacity 1 (FEV1)		//	
FEVI FVC			
Peak Expiratory Flow			
Spirometry Report Enclosed			

25. Cardiological Assessment

51	51	Dudible.	
Auscullation	52	1	1
	Additional Sound		8,,,
Electrocardingraph (12	leads: finding	1	Apromisi
Enclosed ECG .			

26. Neurological Assessment

Finding	
Superficial Reflexes	Abhornal Abhornal
Deep Reflexes	Normal Abnorma
Peopheral Circulation	Normal Abrorna
Vibration Syndromes	Tormal Abnorma

27.ILO Classification of Chest Radiograph.

Profusion of Pneumocaniotic Opacioes	Grades	Types
Present Abscor	Agrind)	00

28. Audiametry Finding

Conduction Type	Left Ear	Right Ear
Ear Conduction	Mormal Abnormal	Abrismal
Bone Conduction	Abnormal Abnormal	Notice Appointment

29. Pathological / Microbiological Investigation

Stno	Test	Finding
1	Blood - Hb% TLC DLC Platelets	Abnormal
2	Blood Sugar - Fasting & PP	AL Abnormal
3	Lipid Profile	Abnormal Abnormal
4	Blood Urea Creatinine	Abnormal .
5	Unne Routine	TINL Abnormal
6	Stool Routing	WNE Abnormal
Engloses	f Investigation Report	

29. Special Tests for Mn Exposur

nt Not Present	naviour Disturbance	Behan
nt / Nat Present	Speech Defect	Neurological Disturbance
nt / Not Present	Tremor	
nt / Not Present	Aduadocokinesia	
nt / Not Present	Emotional Changes	
9	Emotional Changes	

30. Any Other Special Test Required

TATA STEEL

Internal Communication Form

Mr. Karan Kishore Rakesh,
P. No. - 222605,
Operation Assistant - I (Chemist),
NRD. Sijua Group, Jharia Division.

Thro: Principal Geologist, NRD, Jingra.

Ref. No. JMB/278/00108
February 01 2024.

Consequent upon your transfer to West Boka, p Division with effect from 1st February' 2024 vide letter No. HRMRM/2024/10 dated 22th January' 2024 of Chief HRM - Raw Materials, you are hereby released from Jharia Division with effect 1st February' 2024.

On your transfer, you shall be governed by the service conditions applicable to similar category of employees of West Bokaro Division.

You will report to Head HRBP, West Bokaro Division for your new assignment accordingly.

General Manager (Jharia)

Mitra S. K. Private Limited



Shrachi Centre (5th Floor)
74B, Acharya Jagadish Chandra Bose Road,
Kolkata - 700 016, West Bengal, India
CIN: U51909WB1956PTC023037

T: 91 33 4014 3000 / 2265 0006 / 2265 0007

F: 91 33 2265 0008 E: info@mitrask.com W: www.mitrask.com

Ref. No: C/2020-21/2278

Date:6th July2020

To,
Pashupati Nath Gupta
H-No. 20, Paras Nagar,
Dimna Road, Mango, Jamshedpur - 831012.

SERVICE CONTRACT

Dear Mr. Pashupati,

Pursuant to acquiring from Tata Steel Limited, West Bokaro a contract of Lab Outsourcing whose contract period is ending on 14th June,2021 and subsequent to the discussion you had with us, we are pleased to utilize your services as "Chemist", on contract in our Company with effect from 15th June,2020 under the terms and conditions as mentioned below:-

- Your engagement will be purely on Contractual basis for a temporary period of One
 year from the date you join us and will cease to be in effect on completion of such
 period or completion of the contract with Tata Steel Limited, West Bokaro or
 termination of our contract with them, whichever is earlier, unless otherwise
 extended or revised for specific requirement of the job in writing.
- 2. You will be posted initially at the West Bengal branch and/or at Tata Steel Limited, West Bokaro site office and will be reporting to the Branch Manager of West Bengal and/or any other official as may be assigned from time to time. However your contract services may be transferred to Head Office and/or any other branch office site that may be needed strictly in connection with the execution of the above job.

6

Mitra S K Private Limited

748, 5th Floor, Shrachi Centre, AJ C Bose Road, Kolkata, West Bengal 700016

CIN: U51909WB1956PTC023037

T: +91 33 4014 3000 F: 91 33 22650008 E: info@mitrask.com W: www.mitrask.com MSK

Ref. No: WB/2022-2023/035

Dated: 21 Nov 2022

To, Ms. Mehta Bargaon, Ramgarh, Jharkhand, Pin: 843001

OFFER LETTER

Dear Ms. Mehta,

As per discussion with you, you have been shortlisted by our company for the position of Chemist in our organization for our MSK Tata Steel West Bokaro assignment.

You are expected to join at our Tata Steel West Bokaro site on 01.12.2022 positively.

Your are requested to submit the following list of documents(Original & Photocopy) on your date of joining.

- 1. 6 passport size photographs
- 2. Age Proof
- 3. Aadhar Card.
- 4. Pan Card.
- 5. Address Proof
- 6. Photocopies of all mark sheet and certificates from class X on wards.
- 7. Bank details (Pass book photocopy)
- 8. Present Company appointment letter.
- 9. Last three month salary sheet.
- 10. Accepted Resignation letter.
- 11. In case you fail to join on the above mentioned date, this offer will stand cancelled.

Please try to reach at Tata Steel West Bokaro site on 1st Dec'20 22 morning positively so that Gate pass can process at 10 am.

Address: TATA STEEL LTD, WEST BOKARO, GHATOTAND, RAMGRAH, PIN: 825314, JHARKHAND,

Please confirm your acceptance and joining on return letter.

Yours faithfully, For Mitra S K Private Limited

Signature

BRANCH MANAGER



Name	PRIYANKA MEHTA	
	Contractual	CHEMIST
HEAD	PM	PA
Basic	15200	182400
DA	6200	74400
WASH ALLW	3600	43200
HOUSE RENT ALLW	5000	60000
GROS\$	30000	360000
PF (EMPLOYER'S CONT.)	2568	30816
BONUS		21400
LEAVE ENCASHMENT		21400
		433616

Yours faithfully, For Mitra S K Private Limited

Signature

Quella 24/11/22

SI No.		Annexure-II: Expenditure on Environmental Safeguards - FY'24			
		Environmental Expenditure for FY'25 of Tata Steel Foundation			
	SI. No.	Item for expenditure	Rs. In	n Lakh	
1	31. 140.	item for expenditure	Capital	Revenue	
: * :	1	Construction of water harvesting structures (i.e Ponds for natural ground water recharging)		27.9	
	2	Deepening of Atna Pond		13.6	
		Sub Total =	0.00	41.5	

		Environmental Expenditure for FY'25 of W-II		
2	SI. No.	Itam for avanaditure	Rs. Ir	Lakh
	31. 140.	Item for expenditure	Capital	Revenue
	1	Installation of bluescope sheet at conveyor transfer point area and crusher house ro reduce fugitive dust pollution		25.00
	2	Dust suppression (maintenance spares)		17.16
	3	Water Sprinkling for dust supression		5.57
	4	Effluent recycling for resource conservation and zero effluent discharge		22.00
2	5	Cleaning and housekeeping to reduce fugitive emission in washery area		129.33
	6	Repair of HRT to eliminate spillage/ leakage from clean coal HRT		32.00
	7	Effluent recycling repair in middling stockpile area for zero discharge outside premises		4.50
	8	Eliminating soild contamination by concret flooring in crushing plant		12.00
	9	Spillage Control to prevent soil contamination in conveyors and other equipment by scrapper and other control mechanism		35.48
	10	Dry Fog System Operation and Maintenance for dust supression		29.33
	11	Tailing pond structural maintenance to maintain zero effluent discharge		15.00
		Sub Total =	0.00	327.37

	CI No	(*** 1900)	Rs. II	n Lakh
	Sl. No.	Item for expenditure	Capital	Revenue
	1	Bhelgarha cleaning/garbage dumping fogging/ drain cleaning		6.1
3	2	Physiography barrier to reduce fugitive emission: Butcher mohallah to 12 no. chowk (length = 500 RM), Near stock yard (Length= 150 Rm) & Bhadani to RML (Length= 250 Rm)		22.27
	3	PCC road Bhuiyadih		72
	4	Grey water treatment plant at Bhelgarha		17
	5	Re-surfacing of bitumen road at new DMC & Colony area		43
	6	Mukundabeda Bitumen Road		90
		Sub Total =		245.37

12e 77	ci si-	ta de la constant de	Rs. In Lakh	
	SI. No.	Item for expenditure	Capital	Revenue
	1	Effluent recycling system operation/maintenance to reduce effluent generation		10.84
	2	Water tanker operation (including wages) & maintenance cost for dust suppression		481.92
4	3	Cleaning of workshop		68.67
	4	Wet drilling operation and maintenance & modification to minimize water consumption		1416.17
	5	Replacement /Repair of oil tray & oil barrel stored to reduce oil spillage		4.3
	6	New pump for recycling system		0.8
		Sub Total =	0	1982.7

		Environmental Expenditure for FY'25 of Power House		
	SI. No.	Item for expenditure	Rs. I	n Lakh
	31. NO.	item for expenditure	Capital	Revenue
	1	Dry fog maintenance to prevent dust suppression		7.92
	2	Cleaning and housekeeping maintenance of power house area to prevent fugitive dust		44.4
	3	Tailing pond & ash pond embankment strengthening/toe wall to prevent spillage		1.00
	4	DM plant corrosion resistant painting to avoid seepage/land contamination & Clarifloculator painting		10.5
5	5	Installation of Upgraded Side Skirts in Conveyors to reduce Coal spillages		28.0
	6	Pipeline replacement in existing ash system & recovery lines to reduce water leakages		22.5
	7	ESP field O/H maintenance and Wet Washing to increase efficiency		19.5
	8	Vertical Slurry pumps replaced without Seal water pumps to reduce the ash line failures		31.5
	9	Installation of Secondary Oil Cathment trays in Oil drums.		11.0
	10	Auxiliary Power savings due to Boiler#1 major shutdown.		60.0
	11	Maintenance of Continuous Emission Monitoring Station		0.5
	12	Renewal of Boiler Insulation to reduce heat loss and dust		15.0
		Sub Total =	0	251.82

	CU NIS		Rs. Ir	Lakh
	SL No	Item for expenditure	Capital	Revenue
	1	Water sprinkling on road for dust suppression		2.95
	2	Spillage cleaning for Waste Management		86.34
6	3	Cleaning at both the points of LPC (Ghato end & Chainpur end) to reduce fugitive dust generation		19.9
	4	Removal of unwanted Material along the Track line (new and old yard) to reduce water flow		55.9
	5	Boulder and Unwanted Material (removed from empty wagons) Transportation from Stacking place for minimize dust generation		34.67
		Sub Total =	0	199.76

		Environmental Expenditure for FY'25 of W-III		
	3 4 5 6 7 8	Item for expenditure	Rs. In	ı Lakh
	31. 140.	item for expenditure	Capital	Revenue
	1	Dust suppression by sprinkling	8	9.6
	3	Effluent Recycling including power cost for zero effluent discharge	5	2.1
	4	Maintenance of Dry Fog System for dust suppression	-	14.39
	5	Cleaning and Housekeeping for fugitive dust suppression	냋	58.8
7	6	Mechanical Tailing Dewatering to ensure Zero Effluent Discharge	3	1531
	7	Power cost for Tailing Dewatering Plant to ensure Zero Effluent Discharge	ತ	130.32
	8	Better efficient Light replacement and repair to reduce power consumption	Q.	7.53
	9	Road construction for Tailing transportation to minimize dust generation	2	0
	10	Spillage control in conveyors	8	24.41
	11	Overhauling of media filter	3	5.61
	12	Housekeeping in office building	g	7.32
		Sub Total =	0	1791.08

		Environmental Expenditure for FY'25 of Environment Management Cell	70	
	SI. No.	Item for expenditure	Rs. In Lakh	
	31. NO.	item for expenditure	Capital	Revenue
8	1	Annual maintenance of environmental monitoring station (CAAQMS, CEMS & PM10 analyser)		6.4
	2	Support for Environmental Activities and Jobs (Manpower, Vehicle etc.)		17.09
	3	Statutory Paayment Charges		49.35
		Sub Total =	0	72.84

9	CL No.	team for a superior to the sup	Rs. Ir	n Lakh
	SI. No.	Item for expenditure	Capital	Revenue
	1	Town cleaning/garbage dumping fogging/ drain cleaning		200
9	2	PCC road at different location of Township		5
	3	Drain repair and development at Township		2
	4	Mechanised cleaning of septic tank and overhead water tank		2
	5	Pre-mixed raod near FRS gate and Banji vilage		10
	6	PCC Road at new new magazine area (140 RM)		3
	7	RCC and PCC road at Parking area (250 RM)		50
	8	RCC road at Tailing pond (Length=50 RM)		15
	9	RCC road at Washery-III (Length= 45 RM)		15
		Sub Total =	0	302

	Environmental Expenditure for FY'25 of Water Supply							
	SI. No.	Item for expenditure	Rs. In	Lakh				
	31. NO.	item for expenditure	Capital	Revenue				
10	1	Pipeline laying activities at park and other areas		19				
10	2	Development of pumping station for ash pond & recycling water restoration		25				
	3	STP/ETP operation and maintenance activities		70				
	4	WTP operational cost		300				
		Sub Total =	0	414				

		Environmental Expenditure for FY'25 of QAB		
	SI. No.	Item for expenditure	Rs. Ir	n Lakh
	31. 140.	item for expenditure	Capital	Revenue
	1	Effluent recycling system in FRS to reduce effluent generation		2.587
11	2	Tree plantation & lawn maintenance		43.72
	3	Water tanker operation (includes wages cost) & maintenance cost for dust suppression		378.1
	4	Cleaning of workshop		88.43
		Sub Total =	0	512.84

		Environmental Expenditure for FY'25 of TMH	Rs. In Lak	h
	SI. No.	Item for expenditure	Capital	Revenue
	1	Handling and Disposal of BMW		1.72
12	2	Procurement of BMW Colour Bags for BMW management		0.13
	3	Bleaching Powder for effluent treatment		0.2
	4	Effluent Treatment Plant Operation		14
	5	Cleaning staff (10 contract workers)		18
		Sub Total =	0	34.05

		Environmental Expenditure for FY'25 Planning & Horticulture			
	SI. No.	Item for expenditure	Rs. In Lakh		
			Capital	Revenue	
	1	Parks Maintenance (Maintenance, Security, Material etc.)		115.7	
	2	Annual Flower Show Celebration		45	
	3	Bush Cleaning		4	
13	4	Nursery development		2.64	
	5	Poly bags & seeds, pot for Nursery		5	
	6	Annual Plantation		10	
	7	Solid waste management	49.89		
	8	Autosampler with return circuit for middling in both W#2 and W#3	75.52		
		Sub Total =	125.41	177.34	

Expenditure incurred towards environmental safeguard activities of West Bokaro Division Rs. =	6478.08
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